

# AMERICAN VETERINARY REVIEW.

JULY, 1915.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

Bois-Jerome, 15th of May, 1915.

**LEISHMANIOSIS IN ANIMALS.**—The study of these affections, in animals, whether in their natural development or in experimental observations, offers a great interest. The natural disease of dogs is probably of the same nature as the infantile or Mediterranean Kala-Azar, and it is most likely that dogs play an important part in the propagation of this human disease.

Canine leishmaniosis on that account is of great interest as in the actual condition of science there are strong probabilities for the disease being transmitted from dogs to children.

For that reason it is essential that veterinarians be familiar with the entire history of the disease in dogs, with the methods of examination to find the detection of the parasites.

Professor Dr. A. Laveran has published recently in the *Annales de l'Institut Pasteur* a series of studies which relate to Leishmaniosis in animals, covering considerations:

1st, of the natural canine leishmaniosis; 2nd, on the experimental infections due to the *L. infantum*; 3rd, on those due to *L. Donocani*; 4th, on the natural or experimental infections by the *L. Tropica*.

The first of this series interesting the practical veterinarian, I will make from it the following extracts.

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**NATURAL CANINE LEISHMANIOSIS.**—The history and prevalence of the disease is first considered.

While the first observation of the natural disease by C. Nicolle and C. Comte goes back only to 1908, records are found of other observations, most of them, however, relating to cases observed in neighboring countries—Tunis, Gafsa, Stay in Tunis, by Nicolle, Comte, W. L. Yakimoff, Gray. Then in Algeria by Sergent and Senevet, Lemaire and Lheritier; at Malta by Wenyon, Lisbon by Alvares and da Silva, in Spain by Pittalenga, at Palermo by Jemma, at Marseilles by Pringault, at Athens by Cardamatis, and in Transcaucasia by D. Schunkowsky and Luhs.

All those records were made up to 1913, but to this date the natural canine disease has not been observed in the regions where the Indian Kala-Azar is endemic.

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*Symptoms.*—The disease is at times slight and latent, at others very severe. The duration of its evolution varies; it is more or less rapid and difficult to calculate, as the first manifestations are always unnoticed.

In the light or latent form, the disease may not be recognized, even by the methods generally used.

The cutaneous manifestations, which are at times observed in dogs affected with leishmaniosis, generally depend on parasitic affections, not related to the disease.

In severe forms, the principal symptom, very often the only one observable, is given by the loss of flesh. In some animals, the hairs fall in places or small ulcerations appear on the buccal, conjunctival or nasal mucous membrane. In an advanced stage of the disease, the dog becomes apathetic, remains lying down, and when urged to rise, he shows great general weakness, principally in the hind quarters. Generally anemia is not well marked, the appetite remains even towards the end of the disease, even sometimes when there is diarrhoea. The spleen is often hypertrophied, but difficult to detect. Death ordinarily takes place in hypothermia. Some dogs have keratitis with consecutive opacity of one or both corneas.

The approximate duration of the disease is between three and twelve months. At the postmortem, the spleen is often found much enlarged, softened in acute forms of the disease, as sclerosed in dogs destroyed in advanced stage. The liver may also be enlarged in acute forms, sclerosed in chronic. Bony marrow is red, diffuent. It is in that that Leishmanias are found in greatest number; but they may also be detected in the spleen, the liver, the lymphatic glands. The spinal cord has been found by C. Basile with Leishmania and its presence in the thickness of the cornea has also been mentioned.

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MODES OF INFECTION—DIAGNOSIS.—In relation to this interesting point, Prof. Lavedan writes that in 1908 Nicolle had advanced the opinion that the natural disease of dog and the infantile Kala-Azar were transmitted by fleas. Some experimental facts seem to confirm that opinion, yet inoculations positive in appearance do not seem to justify this opinion. In fact, there are many points in relation to this mode of infection which render their positive evidence difficult to establish. And the possible infection by other insects, such as the Anophiles or the Cimex, remains yet very obscure.

*Diagnosis.*—As long as the great loss of flesh is about the most constant symptom present, the only means of diagnosis consists in searching for the Leishmania, a discovery not always easy to realize. They are often in very small quantity, as in light form of the disease, or in convalescents; and even at postmortem the histological researches failed quite often.

At any rate it is in the examination of the frottis of the marrow of bones, of the liver or spleen or by cultures of those materials that the parasite may sometimes be detected.

It is naturally more difficult to look for it on the living animal than on the cadaver, but the direct examination of the tissues sufficient in a severe infection, must be completed in mild cases, with the cultures made with the blood or pieces of tissues for histological examinations.

Puncture of the liver has been also recommended; but in many cases is a method of diagnosis altogether insufficient. Examination of the blood, of frottis of dried blood or of cultures as recommended by Novy, may also bring out the detection of *Leishmania*.

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The probabilities of the transmission of the disease from dogs to children, and as no efficacious treatment is known, a very simple prophylactic measure ought to be enforced. All dogs recognized as affected must be destroyed as well as all wandering dogs. The importation of dogs coming from contaminated regions must not be allowed.

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**IODINED CHARCOAL.**—The treatment of wounds has on account of their frequency at this time of the European war, been the occasion for many publications, amongst which I noticed the one made by a Surgeon, Dr. L. Lemaire on the use of iodined charcoal in the treatment of infected wounds, which he considers fulfils the essential conditions of usefulness for a dressing requiring but rare renewing.

The iodined charcoal is not a single mixture of charcoal and iodine, but the result of the fixation of the metalloïdic iodine upon the powdered charcoal, *a true solid solution of iodine in animal charcoal*.

Indeed, in placing iodine in the presence of the charcoal, this last retains a certain quantity of the metalloïd. Properly known since 1857, and from which charcoal was considered as the antidote of iodine. But it is not a chemical combination that takes place, it is a physical phenomena which is called *adsorption*.

*Adsorption* confers to the bodies in presence new physic properties and chinal characters often different from those that they possessed primitively. For some writers, there is condensation of the adsorbed solution on the surface of the one that adsorbs;



then adsorption would be the result of a superficial tension. For others, there would be a true penetration of the adsorbed substance in the carrying matter. Whatever it may be, when charcoal is poured into a solution of iodine, a part of this is adsorbed by the coal and the balance remains in the liquid. At any rate there is always traces of iodine which become free when the charcoal is moist or dampened by atmospheric humidity. And as in the liquids of the organism and of the tissues, there are substances ready to fix chemically the iodine, it becomes evident that by the adsorbed iodine, there will be a slow and continuous escape of the metalloid.

With ordinary temperature, iodined charcoal or carbiode, in dry surroundings, gives out only traces of the iodine. At 120 degrees in the autoclave it is not altered. It demands a heat of 200 degrees to be entirely volatilized. Warmed like iodoform, it gives characteristic purplish vapors. It can be used for fumigations of iodine.

These general theoretical considerations being presented, the mode of using the iodined charcoal is given concisely.

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*Therapeutical uses.*—Dr. Lemaire writes: "The iodined charcoal that I used was dosed at 10 p. % on weight of pure iodine. It was primitively destined for internal use, when it was decided to resort to it in the treatment of infected wounds. And then it was tried in numerous wounds, infected, of different natures: accidental, old ulcers, wounds from anthrax or large abscesses, etc., etc., and the results have been always superior to any other of the antiseptic agents known.

To the action of the iodine was added that of the charcoal, reputed for its absorbing properties.

The mode of using is simple. The iodine coal being kept in a glass corked bottle, the wound is dusted with it and covered with sterilized gauze. Rapidly the aspect of the wound changes. When the dressing is raised, the coal adheres to the gauze as a

damp crust, none remains in the wound, which appears covered with healthy granulations, an abundant citrine serosity is spread over it, and an epidermic border appears at the edges.

The dressing may remain several days without being taken off, except in gangrenous wounds. It is generally useless to wash the wound, but if it has to be done solution of mercurial preparations must not be used. Alcohol, ether, oxygenated water, formol can be used.

Iodined charcoal dosed at 10 p. % will never give rise to local irritation or to symptoms of intoxication as observed sometimes with the tincture or with iodoform.

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PERNICIOUS ANHEMIA.—The etiology of this disease, which has already called the closest attention of pathologists in the old and the new world, and upon which so much has already been published, has been for two German investigators, Messrs. K. and R. Seyderhelm, the object of observations and experiments which were reproduced in the *Archiv. fur experiment. Pathologie und Pharmakologie* and analyzed by Panisset in his *Revue Generale*.

It has appeared to the authors that the modes of infection of infectious anhemia of horses in natural conditions, were not sufficiently demonstrated and again that the question of the part possibly played by some intermediate agents were not either sufficiently cleared. Those were the reasons which decided on their part new researches so as to solve the problem.

The frequency of the disease between the months of May and November, its breaking out in pastures, its acute development during that period, its chronic course during the intermediate time, all permit of the supposition that the transmission is insured by an intermediate host, insect or parasite, of the digestive canal. It was that suggestion that served as a basis for the investigations carried out by the authors.

They found the most variable species of parasites in the in-

testines, without regularity, but in all the cases, without exception, the stomach contained larvae of oestri, bots, and as they made 85 postmortems, this fact is not without importance—as it brought them to the conclusion that the presence of those larvae was not without some connection in relation to the disease, a point already advanced by Ries, but which had not been accepted because of the want of experimental proof.

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The intravenous inoculation of the product obtained by the crushing of four larvae taken at the autopsy of a horse dead from anhemia, was made in another horse, with the object of transmitting the disease. This inoculation gave rise to severe toxic disturbances which killed the horse in 12 minutes after the inoculation. Animals of other species did not feel the effects from the extract of oestri larvae. Donkeys reacted, but much less than horses. It then seems that the larvae contained a specific substance, toxic for horses. This substance, whose existence had not been mentioned, is called *Oestrine* by the authors. The extract of larvae, taken on healthy horses, possesses the same specific toxic properties; the action may be less rapid. An observation is related in which the extract of three larvae gave rise to morbid troubles only after an incubation of 21 hours: when then there appeared a progressive paralysis of the hind legs which was followed by death in 24 hours. The sub-cutaneous injection kills more slowly, in 4 days, with the same signs of paralysis. The larvae of *oestrus hemorrhoidalis* are much more toxic than those of *Gastrophilus Equi*.

The injection of infra-deadly doses produces a loss of flesh and thermic exacerbations which are manifested every 3, 4, or 8 days. These manifestations permit us to suppose that bacterias, eventually ultra-microscopic viruses, have been injected with the extract unless oestrine itself be able to produce those troubles.

Heating for several hours does not destroy in the extract of oestri the property of giving rise to crises of fever after a certain

time of incubation; alcohol at 96 degrees acting during a day, ether, chloroform, acetone, trichloride of iodine, chloride of lime . . . have no influence upon the extract of larvae.

Taken by the mouth, the extract produces the same effects as if introduced into the organism by inoculation.

Living larvae seem to give up this toxic substance with their excretions, as demonstrated by an experiment recorded by the authors.

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It remained only to prove that the repeated injection of extract of oestri was able to promote a symptomatic condition analogous to that of infectious anemia. Two observations seemed to prove it, as they demonstrate that injections, carefully dosed, determine in horses a febrile anemia, gradually progressing towards death, and which to the clinical and anatomo-pathological point of view cannot be differentiated from infectious anemia of horses. Extracts of the flies themselves give rise to the same manifestations. The identity could be definitely established by the proof of the transmissibility.

In two cases, the disease created by the inoculation of the extract of larvae to healthy horses, was transmitted in inoculating between 200 and 250 c.c. of serum obtained from the blood of the sick ones. Thus transmitted the disease developed after 8 days of incubation, the variations in the weight and the changes in the urine were typical. The lowering of the hemoglobine, the diminution in the number of hematies, the disappearance of the eosinophiles, the lymphocytosis and at the post mortem the alterations of the liver, spleen, bony marrow, etc. . . . all reproduced the pernicious anemia of horses. The transmission to another horse of the disease created by inoculation of the serum from a first horse inoculated with extract was also obtained with success.

The authors come to the conclusion: that pernicious anemia of horses is not caused by an ultra-microscopic virus but by a toxic substance, oestrine, exclusively specific for horses

and which is produced by the larvae of oestri and particularly of *Oestrus hemorrhoidalis*.

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BIBLIOGRAPHIC ACKNOWLEDGMENTS.—The Bureau of Animal Industry has favored me with a number of the bulletins of the Department of Agriculture, for which I send my thanks to the Chief, Doctor A. D. Melvin.

Bulletin No. 166 is a professional paper on the *Ophthalmic reaction* for the diagnosis of Glanders by Dr. J. R. Mohler and Adolph Eichhorn. Concise review of the method with four illustrations and conclusions which veterinarians will certainly take into full consideration.

I hope that the method of intra-dermo malleination introduced by Mr. Drouin will also be the subject of the attention of my two American friends. Last month's REVIEW brings the subject before the profession.

Bulletin No. 106 is another professional paper. *The Granular Venereal Disease and Abortion in Cattle*. This is by Prof. W. L. Williams, of Cornell University. Having worked hard on this subject for a long time, the author was the very one to be selected to write this bulletin. It is a master critic of the theories and opinions expressed by other writers as well as a full consideration of the subject. The bulletin advances the following conclusions:

1. Abortion in cattle is essentially always the result of a chronic infection within the utero-chorionic space, revealing itself at post mortem by the presence of the so-called abortion exudate, which contains generally, if not always, the abortion bacilli.

2. The granular venereal disease of cattle is, so far as known, universally distributed. From clinical observation, it has a vital relation to contagious abortion. It is incurable in the present state of our knowledge, but may be greatly decreased in virulency.

3. Contagious abortion of cattle has attained an essentially

universal distribution, frequently present merely as an unrecognized infection of the genital organs, not inducing actual abortion, but causing premature birth, retained after-birth and sterility.

4. The ordinary if not sole avenue of the entrance of the infection of contagious abortion is the genital canal, and the invasion antedates the sealing of the uterus, which ordinarily occurs within 30 days after conception.

5. When conception has occurred and the cervical canal has been sealed, the fate of the foetus is settled. If a sufficiently virulent and voluminous infection exists in the utero-chorionic space, abortion may result; if such infection does not exist within the sealed utero-chorionic space when the formation of the seal is completed, it will not enter thereafter during pregnancy.

6. In the present state of our knowledge, little or nothing can be done to prevent abortion once the pregnant uterus is sealed and the infection of contagious abortion exists within the hermetically sealed cavity.

7. By systematic disinfection of the genitatia immediately following abortion or premature birth, and also in retained after-birth and kindred infections of the uterus, the affected animals may be largely guarded against future sterility and abortion. It is even more important that the vagina of heifers, whether virgin or previously bred, and cows shall be systematically disinfected for a period before and after breeding, until conception is assured.

8. It is equally important that the genital organs of breeding bulls be kept clean by regular disinfection including washing immediately prior to and after service.

9. Most important of all, breeders of valuable cattle should institute definite, energetic and permanent efforts to guard new-born calves simultaneously against the three great dairy scourges—calf scours and pneumonia, abortion and sterility and tuberculosis.

Bulletin No. 619 is by Dr. G. Arthur Bell on *Breeds of Draft Horses* interesting and valuable with the excellent illustrations reproduced of Belgian, Percheron, Clydesdale, Shire and Suffolk stallions and mares.



Bulletin No. 131—On *Repellents for Protecting Animals from the Attacks of Flies* by Dr. H. W. Graybill.

No. 633—On *Arsenical Cattle Dips* by Dr. Rob. M. Chapin.

No. 147—On *The Effect of the Cattle Tick upon the Milk Production of Dairy Cows* by Drs. T. E. Woodward and W. F. Turner.

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I am pleased to acknowledge also the receipt from the Research Laboratory of Park Davis & Co. of *The Pharmacy of Adrenaline* by Dr. C. P. Beckwith and of *Further Studies with Reference to Spirochetes Observed in Swine*.

A. L.

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## PLANS RAPIDLY MATURING FOR THE GREAT 1915 MEETING IN THE GOLDEN GATE COUNTRY.

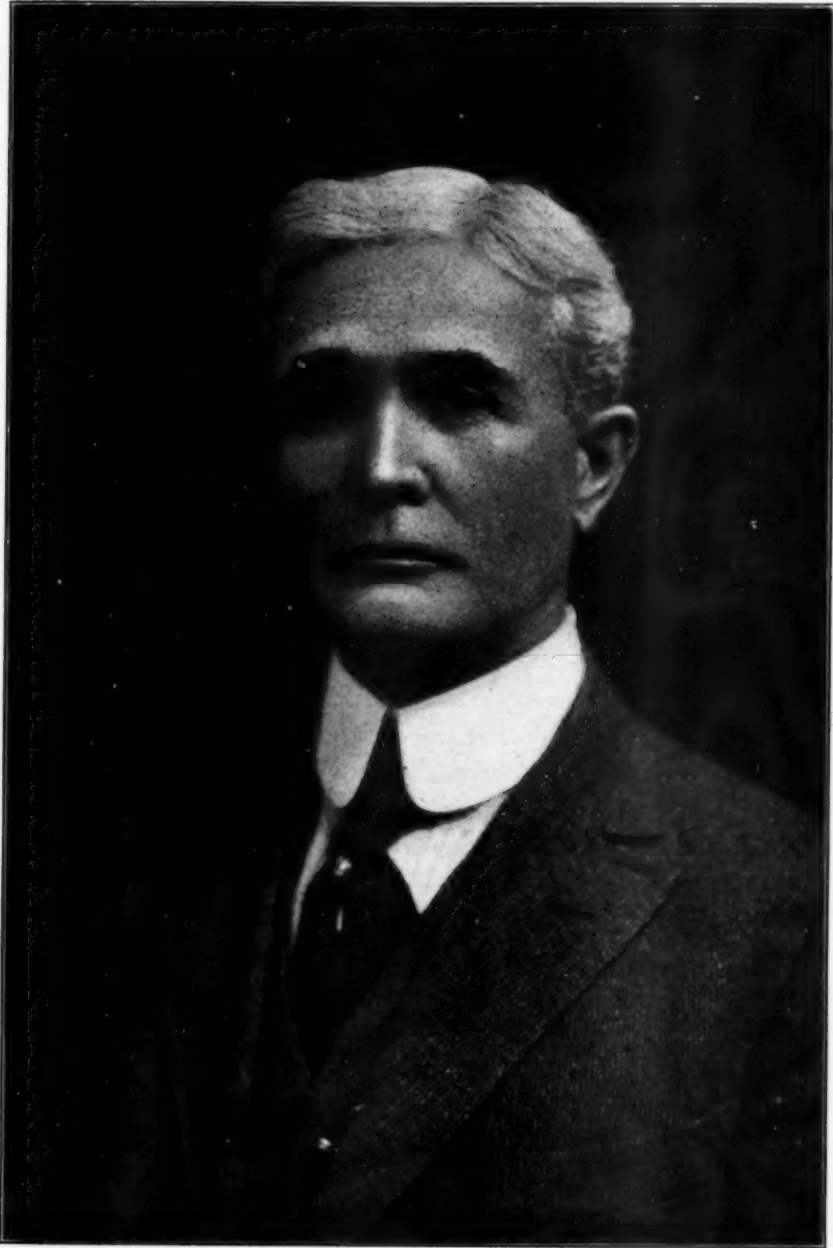
The extensive plans of the local arrangements committee for the Oakland-San Francisco meeting of the A. V. M. A. are rapidly taking form; and each step towards its completion adds to the attraction of the program that our brothers in the Bear State are arranging for the occasion. The enthusiasm apparent among the members of the California State Veterinary Medical Association at its recent meeting in San Francisco (June 9th), in anticipation of the coming meeting, and their unanimity of effort and determination to make the 1915 meeting a success, makes it an assured fact in advance. In fact the plans both for the educational sessions and for the entertainment of the visiting veterinarians and ladies, are already well advanced. The details of the former have not reached us at this writing, but the general arrangement is as follows: The *general sessions* on Monday, Tuesday and Wednesday *mornings*; the *section meetings* in the *afternoons* of those days and on *Thursday morning*. The reception is to be held Tuesday evening, the banquet on Wednesday evening and the business meeting on Thursday. And now for the details of the program for A. V. M. A. Day, Friday,

September 3d, referred to in our June issue, and the details promised for the present number. Everyone will be stirring early on that morning, as at 9.20, the members, accompanied by their wives or other ladies of their family, or friends, will leave 12th and Broadway, Oakland, by the Key Route train, for Key Route pier, where the boat will be taken for the Exposition; arriving at the Exposition pier at 10.15, where the party will be met by a band, and transported by the "Over Fair" railroad to Congress Hall. The committee have planned a little ceremony to take place at this juncture (10.30 a. m.) in the form of a presentation to the members of the A. V. M. A. party, by Exposition officials, of bronze medals, commemorative of the occasion. At 11 o'clock, there will be a live stock parade, arranged with special reference to the visiting veterinarians. At 12 o'clock a luncheon in the Exposition grounds; after which, at 1.15 p. m., there will be a cavalry review, and finally, at 3.30 a reception and tea at the California building, which will bring to a close a day long to be remembered by those whose good fortune it will be to participate in it. Remember the official train leaves the Union Passenger Station, Chicago, via Burlington Route, at 11 p. m., Tuesday, August 24th, and that you can make your reservations on that train by writing the General Passenger Agent, Mr. A. J. Puhl, 141 S. Clark street, Chicago, and remember also, that a hearty welcome awaits you at Oakland.

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#### DR. J. E. GIBSON AND THE NATIONAL ASSOCIATION OF BUREAU OF ANIMAL INDUSTRY EMPLOYEES.

When the National Association of Bureau of Animal Industry Employees convenes in New York next month, the man who will preside over its deliberations will be one who has been most active in the constructive work of the organization: Dr. J. E. Gibson, a native of Indiana, more recently of Albany, N. Y., and now of Little Rock, Arkansas. After graduating from the Indiana Veterinary College in 1904—having enjoyed the distinction of being valedictorian of his class—Dr. Gibson followed



J. E. GIBSON, D.V.M.,  
President, National Association, Bureau of Animal Industry Employees.

private practice for three or four years; but he fancied the work of the Bureau of Animal Industry, and entered the service in 1908, reporting to Dr. E. P. Schaffter, inspector in charge at Cleveland, Ohio; from which place he was afterward transferred to the field force under Dr. W. E. Howe, of Denver, Colorado. From there he was transferred to the meat inspection division at Indianapolis, Indiana, and later placed in charge of the field force, engaged in scabies eradication in Indiana. Returning to Indianapolis, he was placed in charge of the ante-mortem inspection work at that place, and subsequently made supervising inspector under Dr. G. W. Butler; which position he vacated to assume the important position of inspector in charge of the B. A. I. service at Albany, N. Y., including also the sub-stations of Canajoharie and Hudson, N. Y., and North Adams, Mass. Important though this position was, it seemed that a still more important field called him, as from Albany he was transferred to the work of Hog Cholera Eradication under project C, and placed in charge of the operation in Arkansas, working in co-operation with the University of Arkansas.

Such has been the varied experiences and constant advance in the service of the man that the National Association of Bureau of Animal Industry Employees has twice honored with the executive office in their organization, and the executive committee have voted him the official representative of the association at the American Veterinary Medical Association at Oakland, California.

This recognition and expression of confidence in Dr. Gibson on the part of the members of the N. A. B. of A. I. E. is but a natural consequence of his earnest support of all its undertakings from the beginning. His earnestness and honorable methods of dealing with his fellow employees soon won the confidence of the B. A. I. men at Indianapolis, who selected him as their representative at the first meeting held in Chicago, Ill., in November, 1912, which was called for the purpose of organizing the present association. Dr. Gibson took an active part in perfecting the organization of the association at that time, and was

elected vice-president. He was re-elected to that office at the first annual convention of the association, at Chicago, in May, 1913. In July of that year, the president of the organization, Mr. R. W. Wetzel, resigned his office, and the National Executive Committee, according to the by-laws, voted to advance Dr. Gibson to the office of president. Immediately upon assuming the office of National President, he was recognized as a real leader, and much of the progress made with the Lobeck Bill is due to the campaign in its behalf, having been carried on under his supervision. At the last annual convention, held in Denver, Colorado, in August, 1914, the organization expressed its appreciation of, and confidence in, Dr. Gibson, by again electing him president of the association by a unanimous vote. The doctor was also a charter member of the Indianapolis Branch No. 3 and was president of that body until he was transferred to Albany, N. Y. So that, with a man of Dr. Gibson's earnest interest in the work in which the N. A. B. of A. I. E. is engaged, in which he is supported by one of the most efficient secretaries that we have ever known in *any* organization (who is tireless in his efforts in behalf of the association and of his brothers in the B. A. I. service), we anticipate that the third annual convention of the National Association of Bureau of Animal Industry Employees that will open its first session in New York City on August 9, 1915, will be the most profitable one, from every standpoint, that has yet been held.

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NOTE.—In a recent letter from our esteemed friend, Dr. S. J. Walkley, Secretary of the National Association of Bureau of Animal Industry Employees, we are advised of the death of President Gibson's mother in Indiana, in May. We extend our heartfelt sympathy to Dr. Gibson and his family in their bereavement.—[EDITOR.]

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A FEW POINTS OF INTEREST IN REGARD TO THE HOTEL OAKLAND—A. V. M. A. HEADQUARTERS: In addition to the European plan, this hotel serves daily a series of club breakfasts, from 6 to 11 a. m., ranging in price from 40c. up to 90c., a special luncheon from 11.30 a. m. to 2 p. m., 50c., and a table d'hôte dinner from 6 to 8 p. m., \$1. The menus indicate that the above are all excellent meals; and the a la carte service offers a most attractive variety of good things at very reasonable prices.

## ORIGINAL ARTICLES.

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### REPORT OF THE OFFICIAL TOUR OF EUROPE OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION TO ATTEND THE INTERNATIONAL VETER- INARY CONGRESS AT LONDON, 1914.

BY ADOLPH EICHHORN, WASHINGTON, D. C., AND C. J. MARSHALL,  
PHILADELPHIA, PA.

*(Continued from June Issue.)*

DRESDEN CONTINUED.

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From a visit of the abattoir our party proceeded to the inspection of the Veterinary School of Dresden. This is one of the oldest German veterinary colleges, and Professor Ellenberger, the noted physiologist and anatomist, is at the present the Director of the College. Everyone who has occasion to use the best reference books in connection with anatomy and physiology will always consider the publication of Professor Ellenberger as one of the leading reference books on these subjects. He is a venerable-looking gentleman, with a long beard, and with kindness radiating from his eyes. We learned that he returned from some distance in the country, where he was spending his summer vacation, for the express purpose of meeting our party and to assist in making our stay in Dresden a pleasant one. He guided us through the institution and introduced us to the various heads of the different departments, men who are well known throughout the world. Among these were Professors Baum, Joest, Richter, Miller, Klimmer, Lungwitz and others.

Our attention was called to many points of interest about the school. As we entered the front door we could see through the building, and directly in front of the back door, a small monument of Professor Haubner. In the Festival Room several busts



of past and present members of the faculty can be seen, and among them are Lissering, Ellenberger, Koenig and others.

About two hundred students attend the College. The buildings provided for the housing of the different departments are old, with the exception of the Department of Hygiene and Zootechnic, which is a comparatively recent structure. It is contemplated to remove the Veterinary College of Dresden to Leipsic, where it will become a department of the University. During our visit to Leipsic we had an opportunity to see the ground which has already been broken for the erection of the new Veterinary College. From the information we gathered, this institution will be without a doubt the finest of its kind in the world, as no money is to be spared to make it an up-to-date veterinary college. It will be much larger in every way, and has an ideal location on the outskirts of the city of Leipsic.

During our visit of the college we saw them at their work, particularly so in surgery, in which department several operations were being performed by the professor, his assistants and the students assigned to the respective cases. The horses are cast with the aid of English hobbles on to a mat, which constitutes the operating table. The operating table is worked with hydraulic pressure in a similar fashion as the one described at the Milan Veterinary College. In our presence a horse with fistular withers was operated upon, the *modus operandi* consisting in cutting a V-shaped flap, the removing of the diseased tissue, and the sewing back of the flap. It is claimed that the results from this operation are far superior to any other they have attempted. They also operated on a cold abscess at the point of the shoulder; the technique being similar to the one followed at Milan. Metal sutures were also being used without the insertion of a drainage tube.

Every department has a splendid collection of museum preparations, which are of the greatest benefit to the students. Professor Lungwitz, who has charge of the horseshoeing department, has a splendid establishment for the teaching of the art of horseshoeing, and it is required that every practicing horseshoer in

Saxony must have a certificate, certifying that he attended one of the classes in horse shoeing at a recognized institution. His collection of shoes, feet, models, drawings, tools and everything conceivable that is being used in connection with shoes, is probably the best in the world. He has also a collection of shoes from the various countries, including the United States.

The department of animal husbandry is also well equipped for the instruction of the students. About twenty head of cows are kept there, representing the principal breeds of Germany. They have also several sheep and goats. A special opportunity is given to the students to familiarize themselves with a normal and abnormal parturition. For this purpose they made arrangements with several cattle dealers to provide the school at all times with animals in an advance stage of pregnancy. They are kept in special stalls, and students are required to attend to these animals during birth. As a compensation for providing these animals, the dealers receive five dollars per cow. In the adjoining room the students are provided with cots, where they are required to stay at night near the cow. A record of the temperatures of the animals is kept, and experiments showed that the temperature drops a few hours before parturition.

The department of histology and anatomy offered very interesting features to us. Dr. Baum, who is a collaborator with Professor Ellenberger, has published various books in these branches, and is known throughout the world as an authority on veterinary anatomy and histology. His work, pertaining to the lymphatic circulation in animals, is classical, and it is doubtful whether any work equaling it can be found in the literature of human medicine. The original specimens can be seen in his department, where the lymphatics are injected with a blue-colored mass. They may be seen ascending and descending from the lymphatic glands, and followed to the minutest vessels, and his cuts in his recent publication on lymphatics are true reproductions of the original specimens. It took years of painful work for Professor Baum to acquire the skill for the injection of the lymphatics in the different species of animals.

Professor Joest, the head of the department of pathology, has also a splendid collection of rare specimens. The post mortem room is provided with a splendid amphitheatre, from which the student can follow the post mortem examination, conducted by the head or the assistants of this departments. A unique arrangement for the benefit of the students in studying anatomy can be seen in the rooms containing a collection of anatomical and pathological specimens. The carefully dissected and dried preparations are contained in glass cases, but they are hung in such a way that with the aid of small pulleys and a rope on the outside of the case, they may be turned in all directions by the student in the pursuance of his studies. The department of pharmacy has also a nice collection. Several cases contain the various poisonous plants as they may appear in hay. Above them is the green plant prepared in wax. Another case contains poisonous animals, while the various kinds of bandages, fire irons, and the application of cold, heat, air, electricity, etc., is also exhibited by the appliances used in the practice of veterinary medicine.

Professor Klimmer, in charge of the department of hygiene, is known throughout the world from his innumerable publications on immunity, and also in connection with the diagnostics and immunization of tuberculosis. His publication with Wolf-Eisner on serum therapy is now being translated into English. Klimmer has conducted a great deal of work with the ophthalmic test for the diagnosis of tuberculosis. The product which he uses as the diagnostic agent is known as Antiphymotol. This is a product prepared from the bacillus of tuberculosis isolated from some cold-blooded animal. They claim very good results from this test. The phymotol is being recommended for the immunization against tuberculosis, but the results are being disputed by numerous authorities. He also conducted extensive experiments in connection with contagious abortion. He recommends vaccination each six months, and the vaccine is being used on all animals in an infected herd. For the diagnosis of this affection he employs the precipitation test. This consists of adding a specially prepared antigen to the serum of the suspected animal.

In the point of contact a ring forms in positive cases. He found this method of diagnosis just as reliable as either the complement-fixation or the agglutination tests. Like others who have given the salvarsan for infectious stable pneumonia of horses a trial, he claims very favorable results. The preparation is administered intra-venously in doses of three or four grams. There is now being established, at the Veterinary College of Dresden, a chair for the teaching of the diseases of fish.

The clinic is divided into four parts, one for the external diseases of large animals, one for internal diseases of large animals, one for small animals, and an ambulatory clinic.

The old, venerable Professor Miller, who is known through his work on dogs, which is used very extensively in this country, showed us through his department, which, like the others, is conducted in the most efficient way for the benefit of the students, as well as for the patients. The hospital for dogs has not very modern quarters, but, in view of the fact that it is contemplated to move the Veterinary College to Leipsic, we were told that it is not deemed advisable, at the present time, to improve them. On inquiry, relative to the cause of canine distemper, this noted old specialist told us that, in his opinion, the causative agent of this disease is unknown, and that he does not place faith in the bacillus bronchisepticus as the etiological factor.

During our stay in Dresden the veterinary faculty of the Veterinary College arranged for a banquet in honor of our party. This proved a most delightful entertainment, where opportunity was afforded us to meet, not only the members of the faculty, but also many noted veterinarians of Saxony. The banquet was held in one of the most noted restaurants, the Belvedere, on the bank of the River Elbe. About forty, besides the members of our party, attended the dinner. Among those present were Dr. and Mrs. Ellenberger, Dr. and Mrs. Joest, Drs. Roder, Schmidt, Müller, Krause, Otto, Redlich, Burrow, Angermann, Illing, Baum, Lungwitz, and several others, including Major Rudolph.

It did not take long for the party to form the different groups

and indulge in chats on the various topics interesting our members, and also our foreign colleagues. Only very few of us could speak the English language, but, nevertheless, there appeared to be only little difficulty to establish means by which members could understand each other quite satisfactorily. This was particularly true in the late hours of the evening, when indulgence in the many kinds of beverages loosened the movements of the tongue, and it is rather remarkable how such stimulants will make polyglots of even those who otherwise command only a single language.

The dinner was certainly a splendid success in every respect. The uniformed members of the profession who were present added to the picturesqueness of the affair. We certainly will always cherish the highest regards towards all those who made our visit to Dresden such a splendid success, and feel particularly thankful to the members of the faculty of the Veterinary College of Dresden.

#### LEIPSIK.

From Dresden we proceeded to Leipsic, which is only a distance of seventy-two miles. The country through which we traversed is very rich agriculturally, and the most diversified agricultural products are cultivated, that is, such as oats, wheat and barley. This section of Saxony is very thickly populated, and neat villages and cities may be seen in rapid succession as the train traverses this region. Leipsic is the second largest city of Saxony, and is principally noted for its remarkable book industry, and also as the greatest fur center of continental Europe. Some parts of the city are striking for the old buildings which were erected many centuries ago, and which still possess the interesting features of the architecture of those ages. Particularly does this apply to the old city hall, and the surrounding structures, which appear in marked contrast against the modern buildings which constitute the greater part of the city. Of greatest interest to our party was the visit to the Veterinary Institute, which is under the directorship of Professor August Eber. This new veterinary institute was erected in 1903, and constitutes a part of the uni-



versity. The principal building, an imposing one, consists of a lecture room, an anatomical work room, a museum, and laboratories for research work. There are also additional laboratories for the directors and their assistants, a chemical laboratory and an isolation room for the study of diseases transmissible to man. In the adjoining building there is an experimental stable for



Veterinary Institute with Clinic and Polyclinic, Main Front, Linne Street, Leipsic, Germany.

horses and cattle, and also smaller stables for calves, dogs and hogs.

The clinic rooms are placed between the main building and the stables, and constitute a two-story building, which contains a very spacious operating room, and a hospital to accommodate twelve horses. There is also a pharmacy, a feed room and waiting rooms.

The primary object of the institute is to afford the students of the university opportunity to pursue, in connection with their agricultural subjects, the study of anatomy, physiology, and the various diseases of the domestic animals to an extent that will enable them to intelligently comprehend feeds and feeding, ani-



mal breeding; likewise the necessary fundamental principles of hygiene for the prevention of diseases. For this purpose they receive lectures during two semesters, an outline in anatomy, hygiene, external and internal diseases of animals, and physiology. In connection with this, demonstrations are given once a week. Besides instructions are given in obstetrics, dealing with conception, the period of pregnancy, and the conditions which may be expected during the normal course of pregnancy and parturition. Lectures on infectious diseases and veterinary police afford the students of agriculture an insight into the very important subject of controlling infectious diseases. A special course for students of medicine is given on diseases transmissible to man.



Veterinary Institute with Clinic and Polyclinic, Court View, Windmill Way, Leipsic, Germany.

The principal object of the veterinary institute, however, is the research in various problems of the control of animal diseases. This work is being carried out by graduates who desire to obtain the degree of Doctor of Veterinary Science, which the university confers upon successful students. They prepare the research work in the laboratory of the institute in connection

with their theses. Further, the numerous important studies of Professor Eber have also been performed in this institute.

Among the important research works undertaken in this institute were those of the relation between human and bovine tuberculosis and the protective immunization against tuberculosis of cattle.

Important publications were also originated from this laboratory on contagious abortion and infectious vaginitis of cattle.



Veterinary Institute of Prof. Eber, Leipsic, Germany.

At the present time azoturia and infectious cerebro-spinal meningitis of horses is being studied. In the work on the relation of bovine to human tuberculosis it was found that the infection of bovine with human bacilli are at times difficult, but that in cases where it produces slightly localized lesions, repeated passages through other cattle will increase its virulence until an organism will readily produce a generalized form of the disease in cattle.

Professor Eber believes that the ophthalmic test is reliable only on young animals, and he cannot work up an enthusiasm

for the intra-dermal test. For the treatment of infectious abortion he recommends the isolation of the infected animal as soon as the signs of abortion are shown and separation should be at least for two months, when the animal should be entirely disinfected before returning to the herd. The disinfection of the genital organs, the body, and a thorough disinfection of the stable is also important in the control of this disease.

Most of the methods of immunization which have been recommended for tuberculosis have been tried in this institute, and Professor Eber thinks that none of them will ever be of value.

The museum of the institute is of very great interest to veterinarians and students of agriculture. There is a nice collection of harnesses, ox yokes, models of cow barns, devices for preventing calves from suckling, etc. Of historical interest is a pair of crude looking horse shoes, which were removed from Napoleon's white horse the day after he was defeated at Leipsic. They have also very good specimens of sheep pox. This disease was not heard of in Saxony for thirty years, when it suddenly made its appearance with an intense virulence, causing great losses among these animals.

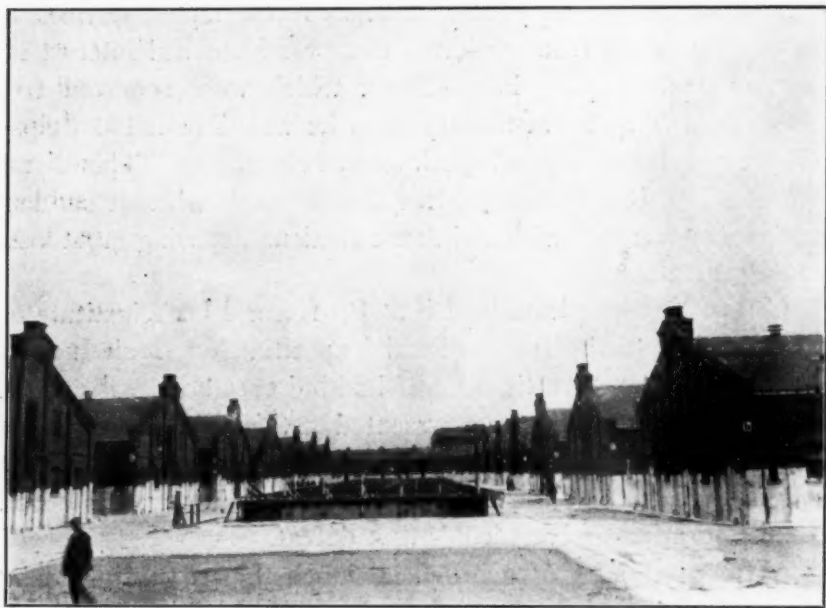
After the very pleasant visit at Professor Eber's institute our party walked to the International Exposition on Book Industry and the Graphic Arts, the first of its kind ever held. Practically every civilized nation was represented at this exhibition. It was located near the monument of the Battle of the Nations, which is considered one of the finest of its kind. This was erected in commemoration of Napoleon's first defeat.

After partaking of a beneficial lunch the party divided into groups and visited the grounds and various buildings of the exposition. Everything pertaining to the art of printing and illustrating could be found in these buildings. Libraries of rare volumes with historical etchings were in the greatest accumulation and could be enjoyed by everyone who had interest in these lines. The exhibit of the United States was particularly interesting to us, since it compared very favorably with that of other countries which are supposed to be very far in advance of us in these industries.

## BERLIN

A short ride on the train brought us from Leipsic to Berlin. Most of the members were particularly very anxious to reach this city for obvious reasons. Some since it afforded them an opportunity to have a prolonged stay in this beautiful city and a rest from the continuous, tedious travel, and others because they expected to meet friends who had made arrangements to meet them in this place.

Berlin is one of the beautiful cities of the world. The monumental buildings are much appreciated by all visitors, and they are grouped close together. Many of these are on a street known



Retaining Stables at Stock Yards of Berlin.

as Unter den Linden, and the others are in very close proximity. A sight-seeing car afforded our party a splendid agent to become acquainted with the most beautiful sections of Berlin. Leaving the hotel, we soon entered this famous avenue from the west, passing through the Brandenburg Gate. This is a massive structure, nearly two hundred feet wide and one hundred

feet high. A chariot of victory drawn by four horses is on top of this gate, and it has a very interesting history. One hundred years ago Napoleon passed under this gate, and, seeing the chariot of victory, ordered his French soldiers to remove it to Paris. But sixty years later the tables were turned. The German army was in Paris and was rejoiced to be able to bring this chariot of victory back to Berlin.



Market Hall for Large Animals, Berlin Stock Yards.

Among the beautiful buildings seen on this trip is the Royal Library, which occupies a space of a block square. Next to this is the home of the University of Berlin, the enrollment of which is over eight thousand students. Opposite to this is the palace of Emperor Wilhelm, the man who was in charge of the Prussian affairs at the time of the Franco-Prussian War, forty-four years ago. In another palace is an opera-house, and then comes the palace of the Crown Prince and the residence of the military commander of Berlin. On the other side of the street are two magnificent buildings, one the Royal Guard House, and the

other the arsenal. By crossing the bridge one enters the Castle Place, on which the royal palace of the present Kaiser is located. Opposite the Royal Palace is a beautiful cathedral, finished only seven years ago. North of the cathedral are four beautiful museums, filled with treasures of art and antiquities.

Returning through the Brandenburg Gate, one gets into the most beautiful section of Berlin, which is known as the Thiergarten, where may be seen the monumental structure of the Parliament, which cost over five million dollars. In front of it is the great monument of the Iron Chancellor, Bismarck, who was

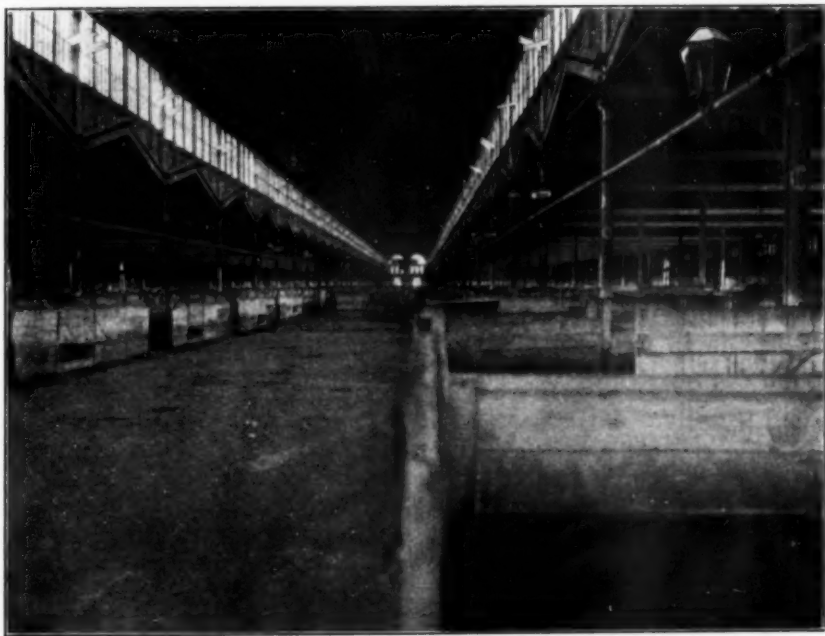


Market Hall for Small Animals, Stock Yards, Berlin.

probably more responsible than anybody else for the present progress of the German Empire. At a short distance from this is the still more striking monument of Victory. This is a singular column two hundred feet high, with a female figure, wreath in hand, on top of it. Around the column there are three rows of cannons, twenty each. These sixty cannons were captured in the wars with France, Austria, and Denmark. From this monu-



ment there leads an avenue of trees and monuments of white marble, which was designed by the present Kaiser himself, and erected at his own expense. This is known as the "Avenue of Victory." It contains thirty-two marble statues of his ancestors. It is interesting that at the time of its completion the Kaiser was made the subject of many satiric remarks on his ancestral glorification. Extending in all directions from the Avenue of Victory there lies about six hundred acres of woodland, through



Market Hall for Small Animals, Berlin Stock Yards.

which there are many beautiful drives, walks and avenues. There are pools of water, streams and bridges. It is in the very center of Berlin, and is as much to the city as the Central Park is to New York.

Berlin is a city of monuments. The finest is near the Royal Palace, and represents the great Emperor Wilhelm I in military costume, seated on a horse, and lead by a woman representing peace. The statue is placed in a round colonnade with allegoric figures of bronze placed very artistically around it.

*(To Be Continued in Our Next Issue.)*

## FOR BETTER, FOR WORSE.\*

By CHARLES H. DUNCAN, M.D., NEW YORK, N. Y.

"She was bred in old Kentucky," is one of the highest compliments that can be paid to any mare; not because "the meadow grass is blue," or the sun shines brighter in Kentucky than in many other States, but because stock breeders there understand the breeding of horses. They have learned from practical experience many things about horses that are conducive to the development of the highest type of the thoroughbred animal. Among other things they have learned is that when a thoroughbred mare is bred to an inferior stud, she becomes permanently injured for thorough breeding purposes. It is a well known fact that when a thoroughbred mare is bred to a jack, every subsequent colt she has, even though she never again is bred to a jack, almost invariably shows some physical or other characteristics of the jack, namely, long ears, the jack foot, coarse hair, etc. Furthermore, these colts, although not in a direct line with a jack, usually manifest, in addition to the physical characteristics mentioned, a disposition to balk, bite, kick, etc. That these colts have donkey blood in their veins is apparent, for mulish characteristics are transmitted to their colts, even to the fourth and fifth generation. In other words, the mare is indelibly stamped or stained with both the mental and physical characteristics of the jack; she becomes permanently ruined for thoroughbred breeding purposes, because she henceforth has jack blood in her veins; she is an altered animal and never again will be the same. Breeders of other high bred animals have long recognized that the male transmits his mental and physical characteristics to the female when bred to her, as in the breeding of high bred dogs. A thoroughbred bitch lined by a mongrel is no longer valuable for breeding purposes. Breeders know this well and carefully guard their females from male dogs without a pedigree. These changes in the female alter her whole physical and mental structure, and

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\* Reprinted from the New York Medical Journal for January 16, 1915.

are due to the assimilation into her generative organs of the male elements of procreation. We know that the male transmits physical and mental attributes to the offspring, according to Mendel's law, and in a somewhat similar manner these are transmitted also to the mother.

Our best information concerning many problems in medicine comes from animal experimentation, and it is in this direction that elucidation of many of the great, still unsolved problems in medicine must be sought. The horse is an herbivorous animal; the dog mostly carnivorous. In solving other problems in medicine we believe that the law that holds good in these two classes of animals will hold also in man for the genus, man, lies between the two in this respect, he being both herbivorous and carnivorous.

If the foregoing phenomena observed in the breeding of animals are applicable to the human species, the human mother will partake of the physical and mental attributes of the father of her child.<sup>1</sup> She has his blood in her veins; she is, in a certain sense, "born again"; and in the same sense the husband may be said to "give birth to his wife." For this reason she has the physical and mental characteristics of her husband so indelibly stamped in and upon her physical and mental being, that these become permanent. Several of the older obstetric writers, recognizing that children by a second husband often presented featural resemblances to the first, accounted for this on the basis of stored up mental impressions received by the mother from her first consort. Breeders of animals, however, have thrown new light upon this family resemblance. Without entering into a discussion as to how much or little influence may be exerted upon the offspring by the mental attitude of the mother, we see that other influences are operative in the production of this family resemblance. Many authorities now regard prenatal influence as a myth.<sup>2</sup> If this is

<sup>1</sup>It is not intended to convey the impression that there actually has been a transfusion of blood into her veins; but, just as she has not her father's blood in her veins, but partakes or may partake of her father's characteristics by virtue of the influence exerted by chromozones of the spermatozone upon her mother's generative organs, so she, through the medium of the semen of her mate, partakes of the attributes of the mate.

<sup>2</sup>Adami and McCrea, *Textbook of Pathology*.

true, the only basis upon which this common resemblance can be explained is that which is under discussion.

That there is a strong featural resemblance between couples who have been married for many years is a matter of more or less common observation. The changes produced in the woman by parturition may be described as spontaneous variation, in contradistinction to hereditary variation. The wife becomes so thoroughly dominated by the characteristics of the father of her first child that, should she bear a child by a second husband, this second child probably partakes of the physical and mental attributes of the first husband. The child by a third husband manifests some of the attributes of both the former husbands, and a child by a fourth consort possesses some of the characteristics of all four husbands; for the child by either the second, third or fourth husband manifests a tendency to inherit, through the mother, some of the attributes of the former mates. Let us assume that the first husband had red hair. If the child by the second husband has red hair, it *may* be inherited from the first husband. Surely, there is some blood relationship between the two, even though the offspring is not in a direct line with the man whom it physically resembles and whose traits or characteristics it may possess. It might be said that the child is indirectly related to the first husband. If this relationship has ever been recognized, it has not as yet been given a name.

In thoroughbred horses the colt by a second stud is said to have "a drop of cold blood in his veins," if the mother ever had had a colt by an inferior stud. A horse with "a drop of cold blood in his veins" is valueless, for it often stops in a race when it becomes tired and does not go through to the finish. A fighting dog with this taint will yelp when hurt, tuck its tail between its legs, and run. Such dogs are not valuable as fighters and are disposed of as pets and not employed for thoroughbred breeding purposes.

For the sake of discussion, we will call a child with dual fathers<sup>3</sup> a duogenetic child and the mother a duogenetic woman,

<sup>3</sup>Dual is here employed in the restricted sense above described.

by which is meant that the child is by a woman who has had at least one child by a former husband. In the same sense, a woman who has had a child or children by but one husband may be called monogenetic, and the fruit of such a union monogenetic children. In the same sense we may have triogenetic or quadrigenetic women and children. Let us assume a woman in the average walks of life. If her husband possessed the acme of physical, moral, and mental attributes, the mother of his child would change to a higher level in respect of these qualities; that is, she would be vastly superior to her former virgin state by virtue of impregnation. If the husband were of low physical, mental and moral order, she, in turn, would be lowered in these respects by impregnation through him. She would tend to the level of her husband, either higher or lower, according to his attributes. A child by a future husband also would tend to manifest these qualities. Were an ordinary man to marry the widow of the first mentioned hypothetical husband, the children by him would be superior, to such to whom she would give birth if he was her first consort. In this new sense, then, a woman takes a man in marriage physiologically, mentally and morally "for better, for worse." With this explanation we see how very akin is the wife to the husband, adapting herself to various forms and ends, receiving the impress of his being; be it hardened and severe or delicate and sympathetic, his characteristics are reflected in the mother of his offspring. The wife and mother becomes the feminine counterpart of the husband; a plastic medium recast in the mould of her mate. In a sense, man and wife tend to become "of one flesh and of one blood." This leads to harmonious family relations. Where the sex relations between man and wife are normal, union and harmony are more certainly to be found; where these relations are not normal, discord and separation are frequent.

Again, returning to the animal for the sake of discussion, the question that is sure to be asked is: "Would the mare have been stained or would she manifest variation from the parent stock if conception had not taken place after coitus?" Apparently this

is a question that will not at present admit of a positive answer; still, there is much that might lead us to believe that the male elements of generation do affect the female physically and mentally without the occurrence of conception, and that repeated copulation without conception would have still more male effect upon the female. Before this problem can be answered, we must concede that it is possible for substances placed in the vagina to be absorbed.

The female organs of generation are rich in lymphatics or absorbents, especially around the cervix. At the time of copulation (during estruation or heat in the animal), the tissues are congested and smeared with blood; the very conditions under which absorption would be expected most rapidly to take place. That these act as absorbents is well known, for when certain substances are placed within the vagina the lymphatics take them up with the development of buboes. Some mucous membranes are so richly supplied with lymphatics or absorbents that they take up much material brought in contact with them as nutriment in nutrient enemata.

Let us now briefly review some well known facts:

1. At the time of copulation there are secretions in the female generative organs.
2. The whole sympathetic nervous system is centered in the generative organs.
3. At the time of coitus the whole nervous system is aroused to a high state of excitation; the organs are congested and in a state that readily admits of absorption.

It would appear, then, that there is justification for the assumption that some of the male elements of generation are absorbed, especially if coitus is comparatively frequent.

The next question that arises is: "Does this absorption cause in the female variation from the parent stock?" If this is admitted, even in the slightest degree, it suffices for our purpose. By many it is believed that in the early period of development of animal life our primordials were bisexual; that is, each individual possessed both male and female generative organs; and that there



were secretions from these organs, the union of which was necessary for propagation of the species; in other words, that when reproduction occurred, a physiological organic union of the body secretions, similar to what now occurs in reproduction in some lower forms of animal and plant life took place. At a later period, when the tissues became more highly organized, the male generative apparatus developed, in some instances, with consequent male secretions, with retrogression of the female generative apparatus and its secretions; in others, the female generative organs developed with consequent female secretions, and a retrogression of the male generative organs occurred and, therefore, abolition of male secretions. When the unit was bisexual, union of both male and female generative secretions was necessary for perpetuation of the species. This was natural, physiological and essential for the evolution of their physical being and to fulfil the highest function, namely, reproduction. When male and female became separate entities, it was no less necessary for fullest individual development, that absorption of those secretions lacking in the female construction, those elements that her retrograded organs failed to supply, should still take place.

For these reasons the general health of the average normally married woman is better than that of the unmarried, that is, the virgin, excluding, of course, the accidents incident to parturition and infection. Her form rounds out; her general vigor and health improve; she escapes the tortures of celibacy. Physical health is impaired by physical torture; for there can be no physical torture without disease or violation of some physical law. There is no physical torture in the normal married woman in the absence of abnormal or improperly regulated coitus. We all have seen the celibate woman in the full flower of life who required for perfect health, if it may so be expressed, the hormones of her own being, or the male elements which formerly were an integral part of her organism. When such a one marries there is quick response to the male elements when these are absorbed through the vagina; that is, there is response to the stimulus of coitus and improvement in health; the mind and nervous system

become tranquil along sexual lines and there no longer is sex hunger or physical torture. The variations from the parent stock or structural changes probably are more gradual in coitus without conception than when conception occurs and the child goes to term. Still, there is a tendency for absorption to occur after each congress, and changes, varying probably with the male, invariably follow, each increment of absorption contributing to a corresponding increment of change. It appears, then, that the variations taking place in the woman depend, first, upon the amount of absorption; second, upon the dominant properties of the male; but absorption must be more or less constant in order that she receive the elements her retrograded organs fail to supply.

When the elements necessary for the fuller rounding out of her attributes are required in her system, this is manifested by a desire for coitus. Aside from the temporary improvement in health following normally regulated coitus, it appears that there occur deeper structural changes affecting her whole being similar to that which occurs after gestation. For example, a white woman improves in general health and vigor by consorting with a negro; but it soon appears that deeper structural changes gradually take place in her that ultimately will affect both her and any offspring she may have, even by a white man. It is well known that the blood of the same family transmitted through several generations is not conducive to the highest physical and mental development of the descendants. For this reason several of the crowned heads of Europe in the past infused into their families new blood by taking wives of no blood relation to them. The offspring from these unions are said to be mentally and physically superior to members of the family not having the foreign strain of blood. It is by judicious cross breeding that we get the highest types of animals and plants.

In further substantiation of the assumptions of the writer, a quotation from an article entitled *Skin Diseases and their Relation to the Sexual Organs*, by S. Pollitzer, in the *New York Medical Journal* for October 5, 1912, will suffice. He states: "Steinbach showed experimentally that the development of the

secondary characteristics in guinea pigs was due to the internal secretions of the respective sexual glands, and *that it was possible to bring about a virtual inversion of secondary sexual characteristics by injecting young animals with extracts from the sexual glands of the opposite sex.*"

It is difficult to accept the view that there is any substance in the structure of the gland itself that is not found in the secretions of the gland. If this is so, then what is to be borne in mind at present is that the female tends to partake of the physical characteristics of a male by the absorption of secretions from the male sexual glands. Parturition tends not only to cause the wife to grow like a male, but the tendency is for her to grow like that particular male who is the father of her child. Since she tends to grow like her husband in physical and mental characteristics in this instance, and Steinbach shows that the female may be made to grow like a male in physical characteristics when she absorbs male secretions, then, logically, it follows that the female tends to grow like the male whose secretions she absorbs by copulation without conception.

The *New York Medical Journal* says editorially in the November 7, 1914, issue, quoting from the November, 1914, issue of the *New Review*: "Loeb also instanced the feminization of male rats by the implantation of ovaries which made them act like females toward other males." It appears that in these rats there is an overbalancing or a surplus of the secretions from the female sexual glands. The normal female requires the male secretion for proper balancing, so these male rats with ovaries require an addition of the secretion from the male sexual glands for proper balancing. This overbalancing predominance of the secretions from the female glands is manifested by a desire for the male elements that prompt them to act like a female when she requires the male secretion.

That the whole human structure may be profoundly and permanently affected by the introduction of substances into the tissues derived from the sexual organs is demonstrated by the following abstract taken from Dr. Henry T. Brooks' masterly

work on *General and Special Pathology* (page 344). Doctor Brooks says in substance: "The rudimentary mammary glands of a virgin animal may be made to lactate by hypodermically injecting into her tissues the extract of fetus taken from another female."

Physical sexual torture sufficiently prolonged necessarily leads to pathogenic conditions, so beside the physical torture or sex hunger referred to in an earlier paragraph, future investigators probably will find that there are many pathogenic conditions referable to this condition, the cure of which will lie in supplying the lacking hormones from the secretions from the sexual glands of the opposite sex, the semen and the normal vaginal secretions. The celibate individual often has a multitude of symptoms arising from celibacy, which disappear when the celibate condition is terminated.

In developing a new thought, one never knows how far it may eventually be found to reach, especially a new thought like this, that opens up many truths that lie at the foundations of our very life and existence. Let us recapitulate before taking up another phase of this subject and separate accepted facts from more or less theoretical deductions in what has preceded:

1. The wife and mother receives or has transmitted to her the physical and mental qualities of the father of her child.
2. A child may have two or more fathers.
3. A duogenetic woman may endow the child of her second husband with the characteristics of her first.
4. The wife, but not the mother, probably has transferred to her the physical and mental characteristics of her husband.
5. The wife, but not a mother by the first husband, will probably transmit his characteristics to a child by a second husband.

If animal experimentation means anything, we must accept the first, second and third of these statements. These are deductions from well established facts and are probably true in their essential features. If we accept the fourth or fifth or both as containing some truth, it opens a field of thought the possibilities

of which are endless. Yet, minutely examining the various physiological functions, observations and possibilities, we see there is much that might lead us to believe that there is some truth in each of these statements, and that each copulation affects to a greater or less degree, in the manner suggested, the female and her progeny. The mind seems to halt before the avalanche of fearful consequences when we consider the vast army of public women and semiprostitutes. What a frightful conglomeration and mixture, often of the most vicious characteristics, are transferred to them! It appears to be a blessing that they so infrequently procreate.

An investigating mind seeking only the truth will follow it through whatever highways or byways it may lead. Topics like the one under discussion have in the past been so intimately connected with religion that it has been considered unclean to discuss them even in scientific articles, and a physician who has the courage to write on this and kindred topics rarely escapes severe criticism at the hands of the unthoughtful reader. "To the clean all things are clean!" In connection herewith we are reminded of the dense ignorance and superstition with which we long beheld the human body. Galen deemed himself most fortunate to see into a human body that had been injured by an accident. For fourteen centuries his inexact knowledge of anatomy was all we knew of the structure of the human body. It was considered a sin to dissect or cut into or open a human body and as a result we floundered in gross ignorance until the holy of holies was entered by investigators, and then much that was obscure was made plain. "There is nothing either good or bad, but thinking makes it so."

The next question encountered in following this line of thought is: Does copulation cause variation from the parent stock in the male? Does it tend to raise or lower his physical and mental characteristics to the level of those of his wife? It appears that there is little at present upon which to base an opinion regarding this phase of the subject. It is a problem that must be left for future research.



Before we can enter intelligently upon this discussion, we must answer in the affirmative two questions, namely: 1. Are the tissues of the male organ capable of absorbing substances with which they come in contact? 2. Are there distinctive secretions in the vagina? If these two questions are answered in the affirmative, then and only then can we take up the third and most important question, namely: Do variations from the parent stock occur in the male after absorption? Were we to select upon the human body a site for inunction of any medicament into the tissues, it would be difficult to choose one where it would more quickly be taken up than the glans and prepuce. At the time of coitus these are distended and gorged with blood and, therefore, it would appear, in a most receptive state.

There are normally found in the vagina mucus; bacteria, distinctive of the human vagina; menstrual flow; the contents of the Braafian follicle in its passage from the uterus; and smegma. There often is also at the time of coitus a discharge of sexual nerve force. Normal mucus often is present in the vagina during sexual excitation, but we know comparatively little about the normal secretions of the vagina. The most natural time for coitus in the female is during ovulation, which usually is coincident with menstruation. In the prebisexual state we can readily understand that this would be the moment when organic union of the secretions of the body took place. The male being a part of the female—that is, each a part of the other—the male naturally would be affected by any physiological phenomena profoundly influencing the female. We cannot escape the fact that at the time of copulation the male glans and prepuce receive inunction with secretions that are in the vagina. What is the effect of this absorption upon the male? It is physiological and natural that they should be taken up. In the primitive bisexual state, when both the male and female constituted an entity, to say that the male organism was not affected by conception and gestation would be against all reason. The inference is that the male is affected, but inferences unsupported by evidence are of little if any value.

It need scarcely be pointed out how difficult it would be to



prove the permanent effect of absorption upon the male, because so many factors must be considered. Talmy says: "After coition (we will add 'after absorption'), there is a sense of desire gratified, a sense of well being, of drowsiness and sleepiness." There is less sex hunger. It may be said that desire satisfied in the male may be traced to several sources, namely, relief from pressure of the stored up seminal fluid and of sexual nerve tension; psychic effect in giving pleasure to another. But can we affirm that it is referable solely to these sources? We cannot, because of our limited knowledge of the subject.

It would appear, then, that the ancient Hebrew religious rite of circumcision interferes with absorption in the manner suggested, because the removal of the prepuce subjects the glans and adjacent tissues to an irritation resulting in a thickening and induration of the epithelial covering. In noncircumcised subjects the prepuce covers the glans in a quiescent state, thus preserving the delicacy of the tissues protected by it. Again, the prepuce holds the secretions in contact with the glans; each of these factors facilitating absorption.

By the ancients the generative organs of both the male and female were worshipped and regarded as sacred. Abraham took his sacred oath by placing his hand upon his phallus. Owing to the reverence accorded to them, they were depicted in heroic size before the doors and upon the walls of the temples of worship. As a remnant of this ancient veneration, the generative organs of both sexes are even now plainly to be seen from certain angles in the statues and painting adorning the sanctuaries of many of the old world churches. It is altogether probable that the superstitious reverence accorded to them in the hazy past will, in the future, find expression in scientific knowledge that will reveal to us the enormous responsibilities resting upon the individual relative to the sexual organs, and that thereby our lives and destiny may be irrevocably altered or changed, and these changes affect not only the individual but posterity as well.<sup>4</sup> It is altogether

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<sup>4</sup>It appears that changes will ultimately appear in the male as well as in the female, the exact nature of which is not easy to determine, but it requires a much longer time and more frequent exposure to the female secretions than is the case with a parturient woman.

possible that in every sexual act there is a reciprocal specific influence manifested that permanently affects not only the male and female, but any child that may be born either to them or their descendants.

How mixed must be our genealogy; how little sound heredity there is in the world; how many evil recesses or drops of "cold blood" or possibly stains great and small are being handed down to posterity during this generation. How many yellow streaks have our forefathers handed down to us. "We are the same our fathers have been." At night the whole human world goes sex hunting; copulation merely for pleasure is not new. What increments of variation are constantly going on in individuals, in the race, and in the world! How little we understand these changes! What insurmountable barriers of blood between us and human ideas!

It is the object of this paper to arouse thought in the reader; for, this accomplished, it will not be long before more will be learned of this vital and most obscure subject.

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PROPOSED REVISION OF THE CONSTITUTION AND BY-LAWS will be one of the, if not the most active topics under consideration at two big middle west veterinary association meetings this month. The Missouri Valley Veterinary Association will discuss the objects and advantages of proposed changes very similar to those which were proposed for the A. V. M. A. at the New York meeting, when in convention in Omaha, July 12, 13 and 14, and the Missouri State Association will discuss a similar proposition in St. Louis, July 28 and 29. The discussions on this important subject by these two large organizations (a great percentage of whose members will later attend the A. V. M. A. meeting at Oakland), should do much to elucidate the intricate points, and materially assist the discussion that will naturally follow the report of the committee on reorganization, which will no doubt include suggestions for the government of the association.

SOME UNUSUALLY INTERESTING ARTICLES will appear in our next issue—what we have become accustomed to calling our *Convention Number*, as it occurs in the same month with the national convention.

## REPORT OF COMMITTEE ON THERAPEUTICS.\*

By H. D. BERGMAN, AMES, IOWA.

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No single great therapeutic agent has been added to our armamentarium within the last year; however, circumstances equally as startling as the discovery of a new specific have come about. A few months ago the general peace and prosperity of the world were broken by the European war, and not until then did we realize our dependence upon Germany, France, and England for our medical supplies. Not only do these countries grow such valuable botanical drugs as belladonna and digitalis, but the major portion of our synthetics come from these countries. Laboratory apparatus and utensils of many kinds are also now almost unobtainable. The partial or complete suspension of these industries abroad, together with the prohibition of export from these countries, has naturally caused a very sharp advance in the drug market. It is beyond the scope of this report to take up the matter in detail, but as illustrations will cite the present price of a few of the more generally used drugs. The fluid extract of belladonna and belladonna alkaloids have advanced in price over three hundred per cent. Opium and its alkaloids, on account of increased consumption, the doubling of the tariff, and the governmental limitation of production, have nearly doubled in price. Iodine and the iodides are at present about one-third higher than before the war. Digitalis has more than doubled in price and can be purchased only in limited quantities. Phenol and that group of products have about doubled in price. Santonin, on account of its rapid advance in price, has almost reached the prohibitive class from a veterinary standpoint. Particularly noticeable has been the remarkable increase in price of the potassium salts, a number of which are of great importance to the veterinarian. Practically the world's supply of potash comes from Stuttgart, Germany, hence the stoppage of

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\* Twenty-seventh annual meeting of Iowa Veterinary Association, Cedar Rapids, February 9, 10 and 11, 1915.

exportation has caused the doubling in price of such salts as the permanganate, nitrate, citrate, etc. Attention is called to the fact that substitutions can often be made for a great many of the drugs that have increased in price, by giving a little thought to the matter. For instance, sodium salts may be substituted for potassium salts not only therapeutically but chemically, giving practically the same results, and with no more effort than simply to increase somewhat the amount used.

We should soon, as medical men, prepare ourselves for the introduction of the ninth decennial revision of the United States Pharmacopoeia which will probably occur within a few months. Some depletions and some additions naturally will occur and the strength of certain preparations be somewhat changed. On account of the more rigid enforcement of the Pure Food and Drug Act, a greater number of the drugs and their preparations have been standardized as to their active constituents.

It would certainly seem advisable for every veterinarian to purchase the new Pharmacopoeia as soon as obtainable, and thereby become familiar with the book that contains the remedial agents considered the most reliable by the ablest physicians, scientists, and pharmacists of this country.

Critical laboratory research and the adoption of laboratory methods in clinical research have added a great deal to our therapeutic knowledge in the past year. As a result of combining laboratory and clinical research, thereby pointing out any discrepancy between the value of a remedy as established by research, and its supposed value in therapeutics, many of our hitherto highly valued drugs are falling into merited disuse, and some that were of little value because of a wrong understanding of their action have come to occupy a prominent place in our therapeutic category.

Several new books along lines of pharmacology and therapeutics have become available in the past year. Among them might be mentioned Bastedo's *Materia Medica, Pharmacology and Therapeutics*, and Greene's *Handbook of Pharmacology*. Eugen Frohner's *Text Book of General Therapeutics* for veteri-

narians is now available to those who do not read German, having been translated by Dr. Louis A. Klein of the University of Pennsylvania Veterinary School. Dr. Frohner is Professor of Special Pathology and Therapeutics in the Veterinary College at Berlin and his book of some three hundred pages is a valuable one for veterinarians.

The use of various kinds of stock food seems to be becoming more general among stock raisers. It is not the intention to discuss the merits or demerits of these but merely to suggest that the various combinations of tonics, alteratives, etc., which these foods in general contain, may be prescribed in the proper dosage by the veterinarian, omitting the filler, often at considerable saving to the client. The writer has prescribed for flocks and herds several times in the past year the same active ingredients contained in certain stock foods and has found that a considerable saving may be made for the client. This, however, is not stating that the constant administration of these drugs over a period of weeks or months is good therapeutics. It is merely meeting half way, business competition.

#### ATOXYL.

At this point the writer would like to call attention to the therapeutic application of the drug Atoxyl, an organic compound of arsenic, in the treatment of Sclerostomiasis, a parasitic infestation which is becoming very frequent in this state and causing considerable loss among young horses. The writer has had opportunity to observe and treat some hundred cases in the past year varying from yearlings showing progressive emaciation, anemia, enteritis and diarrhœa, and bordering on collapse, to mature individuals showing no untoward symptoms aside from slight frequent colic and diarrhœa. It is not the intention to discuss the life history of the Sclerostoma, with which you are more or less familiar, nor the isolation of the various sources of infestation, together with prophylactic measures against further infestations, but rather to discuss the drug Atoxyl and its therapeutic application in Sclerostomiasis, also supplementary



treatment. The value of Atoxyl which contains from 24.1 to 37.65 per cent. of arsenic, depending upon the preparation used, in organic combination, has been recognized in human medicine for some time, having been used in trypanosomiasis, spirilosis, etc., where the invading organism is found in large numbers in the circulating fluids of the body as well as in the primary lesions. The exact manner in which Atoxyl acts on the invading organism is not understood. Ehrlich considers the action of the drug to be due to reduction products formed in the system. Levaditi and Yamanonchi seek its action in its combinations with the body albumins. Blumenthal believes the inorganic arsenic which is split off in the system is the active agent and finally its action has been sought in the production of antibodies. It appears reasonable that the inorganic arsenic liberated by the slow decomposition of the Atoxyl in the circulation may be the active agent, for there is no question but that inorganic arsenic is destructive to the majority of the lower forms of animal life in the blood and in the test tube. The more powerful action of the small quantities of arsenic liberated from Atoxyl in the body may perhaps be explained by its being freed slowly over a period of time in the blood, or in the interior of the parasite into which the Atoxyl has penetrated. The value of the use of an organic form of arsenic like Atoxyl over inorganic arsenic, may be explained by the fact that it can be thrown into the circulation in much larger doses, as it is said to be forty times less toxic than inorganic arsenic, does not unite rapidly with the tissues as does inorganic arsenic, is slowly decomposed, and yields its products for the destruction of invading organisms over a considerable length of time. It is entirely possible that the toxic, physiological, and remedial properties of the drug are in direct proportion to the amount of arsenic eliminated in the system, and that its only advantages over the older preparations of arsenic are that it may be used subcutaneously or intravenously, and is much less toxic.

In the treatment of Sclerostomiasis the drug is generally used intravenously in about 3 per cent. solution. Small repeated



doses may be given, or for convenience sake larger single doses varying from one to three grams, depending upon the size of the patient. This dose may be repeated in ten days or two weeks. At the same time the parasites should be eradicated from the intestinal tract by the use of capsules of ferrous sulphate and tartar emetic, one being given for six mornings in succession before feeding, and this six-day treatment preceded and followed by the administration of a small aloes bolus. It is not the intention to recommend the drug Atoxyl as a specific in Sclerostomiasis but results based upon its use at the College Hospital and in the field, in the past two years, have been quite favorable; it matters not whether the beneficial results were due to the alterative effect of the large amount of arsenic liberated in the system, or to some specificity of the drug in bringing about the destruction of the invading parasites. Following the treatment the parasites and ova apparently disappeared from the intestinal tract and the larvae from the circulation, and in the majority of cases all untoward symptoms, the results of the infestation, disappeared and the animals assumed their normal condition in the course of a few weeks.

#### ANAESTHETICS.

It is a satisfaction to note that the use of both local and general anaesthetics is coming into much more general practice by the veterinary profession. While it is to be admitted that inadequate facilities often seem to make the use of a general anaesthetic inadvisable, yet very frequently the difficulty and danger are both overestimated by the average veterinarian, and from a humane standpoint and that of satisfactory operating there can be no argument against. Chloroform is of course the most satisfactory general anaesthetic for the larger animals, and it is surprising what results may be derived from a very small amount if properly administered. A dozen anaesthesia sheets taken at random from our College Hospital clinic reports show that on equines the time taken to establish anaesthesia was fifteen minutes, duration of anaesthesia varied from twenty to thirty min-

utes and amount of chloroform used averaged less than four ounces, the drop method of administration being used.

Our method with dogs is to administer from one to two grains of morphine hypodermically about twenty minutes before the operation. A few inhalations of chloroform will then put the animal into a nice state of anaesthesia. The period of recovery is usually from four to five hours.

Of late we have been making use of rectal injections of chloral hydrate in hogs, sometimes followed by a few inhalations of chloroform but more often not. The dosage of chloral is about one and one-half to two drams per fifty pounds weight. The chloral on account of its irritant properties should be well masked, dissolved for instance in four ounces of some fixed oil or glycerin. While this does not give a complete anaesthesia yet the results are very satisfactory. Twenty to thirty minutes should elapse before operating following the administration of the chloral hydrate.

As to local anaesthetics, cocaine, stovaine, and alypin seem to fulfill the majority of indications in veterinary medicine. For the past year or so alypin has been used largely as a local anaesthetic at the College Hospital Clinic. It seems to possess all the advantages of cocaine without the disadvantages. It is generally used in five per cent. solution in regional surgery, the action being noted in about five minutes and continuing equally as long as cocaine. It may be combined with adrenalin solution very advantageously. No symptoms of intoxication, painful after effects, or necrosis of the skin at the seat of injection have been noticed following its use.

#### ANTISEPTICS.

The number of preparations available along this line is practically unlimited. It is not the intention to discuss these, but merely to sound a word of warning as to the overzealous use of antiseptics. In the attempt to destroy or prevent the growth of bacteria, the injurious effect of the agents used on the tissues is often overlooked. In fact the tissues may be so injured by

the continued use of strong solutions of antiseptics or disinfectants that the dangers of infection may be actually increased rather than decreased. This is due to the fact that the vitality of the superficial tissue cells is either destroyed or so weakened as to offer practically no resistance to the invading organisms. Protoplasm, the fundamental basis of life, is the same in plant or animal cells, hence, it appears that an agent which will destroy bacteria, for instance by coagulation of albumin like the action of mercury salts, or however it may, would be apt to have a similar effect upon tissue cells. It is generally considered to be an impossibility to destroy all organisms in an infected area, but rather that sufficient of them may be destroyed, or their development so inhibited that the tissue cells themselves may establish an adequate defense and carry on the normal processes of repair. The use of sterile water or normal salt solution in irrigating wound surfaces following primary cleansing and disinfection will, in many cases, give better results than daily irrigation with irritant, antiseptic or disinfectant solutions which must certainly interfere with normal tissue metabolism.

In closing, attention is called to the fact that the fundamental principle in the art of applied therapeutics is too often lost sight of in both the external and internal application of therapeutic agents, *i. e.*, that applied therapeutics embraces the application by Art of agents foreign to the organisms for the purpose of *aiding* Nature to restore the body to a normal condition, and that these agents are not applied as "cures," for there are no "cures."

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#### LIAUTARD WATCH FOBS.

I have on hand some handsome watch fobs, a black silk ribbon with a bronze medallion of Dr. Alexander Liautard. These were made for the semi-centennial meeting of the A. V. M. A. in New York.

Any member desiring one of these souvenir fobs can obtain it by sending 25 cents—as long as they last.

N. S. MAYO, Secretary,  
4753 Ravenswood Avenue, Chicago.

## INTERSTATE LIVE STOCK INSPECTION.\*

T. T. CHRISTIAN, D.V.S., TEXAS.

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Interstate live stock inspection involves the inspection of all live stock being shipped, driven or in any manner transported from one state to another, and must not be confused with the federal quarantine inspection for fever ticks, scabies, etc.

The primary causes for the enactment of state live stock sanitary laws which require and prescribe the inspection of all live stock coming into a state is the insatiable desire of man to dispose of diseased animals in the most expedient manner available when he finds that he has such in his possession, and he can always find a dealer who is willing to buy this class of stock at the reduced figure which they demand, and assure the owner that it will not become known in his immediate locality that he has knowingly disposed of diseased animals, and in this manner wilfully distributed an infectious disease from his own herd to that of his neighbors'.

Also there is a large percentage of infection among live stock of which the owner and purchaser is entirely ignorant, such as the tuberculous cow and glanderous horse, which are the most dangerous of all, and which cannot be apprehended without an honest test by a competent veterinarian. This being the major class which really demands interstate inspection.

In this manner, infectious diseases had been distributed from one state to another, until it had become obviously a necessity that the states must pass laws requiring that all live stock coming within their borders should pass a rigid examination by competent veterinarians, so that in some measure the spread of the infection might be restricted.

The object of interstate live stock inspection is to restrict the distribution of infectious, contagious and communicable

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\* Read before the Missouri Valley Veterinary Medical Association, at Kansas City, Mo.

diseases and to prevent infection of uninfected areas, and in this manner to protect the health and wealth of the populace by shutting off from their food-producing animals the source of infection.

And to obviate the necessity for a state to expend vast sums of money in the eradication of a contagious disease after it has once become definitely established.

The legislative body of any state has the power to enact laws prescribing the regulations under which live stock shall enter their bounds. Also they have the power to put inspectors in the field and vest in them what authority they may deem necessary to protect the health and wealth of their populace.

The methods to be employed in the inspection of live stock must be formulated to meet the demand of each peculiar locality. Where inspected in transit such as at a point of entry into a state, the stock should be unloaded, be fed, watered and allowed to rest before inspection.

The live stock yards at such points should be so equipped that animals being held for inspection could be amply protected from inclement weather. But where emigrant cars are handled that contain but few live stock, and those with ample room to lie down to rest, and on short hauls, it is often advisable and absolutely necessary to inspect in the car. This is not recommended however where the tuberculin or mallein test is given.

In giving the tuberculin test, the cattle should be allowed a good rest, say from five to eight hours, before starting on initial temperatures, and we consider no test valid unless at least three initial temperatures distributed over a period of twelve hours, and four or five subsequent temperatures, beginning not less than ten hours after time of injection of tuberculin and taken at two-hour intervals, and if the temperature is seen to be rising at the expiration of this time the animal should be held for at least two more temperatures.

Inspection of stock for transportation should be made on the day they are to be moved and not at some indefinite date prior to the time of movement.

In order to have and maintain a more efficient inspection service, the states should endeavor to establish uniform regulations, among which to be included the adoption of a uniform health certificate, on the back of which should be printed a list of the official inspectors and a digest of the sanitary live stock requirements of the issuing state.

This certificate should be made in triplicate, the original to accompany live stock, the duplicate to be sent to Live Stock Sanitary Board of the state of destination, the triplicate to be sent to the Live Stock Sanitary Board of the state of origin.

A great many of the states have adopted the uniform health certificate already.

Also a more uniform scale of fees should be universally adopted. This has also been adopted by several states and has proven to be one of the most efficient manners in which to eliminate the all too frequent claim of graft and overcharges. Local conditions however should govern in a great measure the charge, as what might be considered a reasonable fee at one point would not be applicable at another.

An inspector should not be expected to make a trip where it takes a day's time away from his local business and additional expenses for the same fee that he would do the work at his local point.

A great many complaints arise in regard to over-charges, but I am pleased to say that the bulk of these when ferreted out cannot be substantiated. It is my opinion that the scale authorized by the Live Stock Sanitary Commission of Texas which is also used by some other states is the most satisfactory that could be adopted and is as follows:

At home—tuberculin and mallein test—one head, \$5.00; for the next five head, \$3.00 per head, etc.

Physical examination—For first three head and under, \$3.00; for over three head and up to one carload, \$5.00; for each additional car, \$2.50 per car.

Abroad—Tuberculin and mallein test, \$10.00 per day and ex-



penses for ten head or under. Over ten head, \$1.50 for each additional animal.

Physical examination—The same as at home, with mileage.

This scale of fees has proven adequate compensation for the veterinarian's services and satisfactory to the majority of shippers.

The scope of inspection should be widened to cover strangles, influenza and all so-called shipping fevers. At present very few of the states pay the slightest heed to this class of diseases. It appears that they have come to look upon it as a necessary evil. In fact, Alabama is the only state that I know of which absolutely prohibits the importation of stock with these diseases.

More stringent legislation along this line would bring about some remarkable cleanups and changes in the horse and mule markets in this country, and would save shippers a vast sum of money each season.

There is no field of work which presents more opportunities for dishonest service than that of live stock inspection. Nine shippers out of ten will make an effort to secure a certificate without an actual inspection. They will advance arguments in regard to their knowledge of the stock they are handling and point out the fact that they never talk, and that they want to be released as quickly as possible. Very few of them submit willingly to the tuberculin and mallein tests and it is a deplorable fact that some veterinarians seem to prefer to make out a temperature chart in their office to going into the pens and doing the actual work.

An inspector who is wont to continue such practices should be punished by having his commission annulled and his name published, so that such practices might forever be discouraged.

Every inspector at a point of entry to a state is often confronted with the proposition of the disposition of animals condemned enroute. In many instances, as has been the case with the writer, this stock is in a state other than the state of origin and which prohibits the entry of uninspected animals, yet without the state of destination, and in complying with the re-

quirements of one state you indirectly violate those of another. This is a point which I would like to hear thoroughly discussed.

The results obtained from sanitary live stock requirements are of two classes, the first of a psychologic nature, which prevents the shipment of animals known to be infected.

The second is the apprehending and condemning of attempted shipments of diseased animals, both of those known by the shipper to be infected and those of which he is ignorant.

The common result is the prevention of the distribution of infectious, contagious and communicable diseases from infected areas to uninfected areas.

The two states which from my observation are doing the most toward live stock sanitation are Alabama and Montana, and it is evident that their state veterinarians, Doctors Cary and Knowles, are in a great measure responsible for their efficient requirements.

I am free to acknowledge that in the past Texas has been somewhat backward along the points noted, but it affords great pleasure to call attention to the fact that within the past two years great changes have been wrought and that she is now striving to maintain an efficient safeguard to her live stock industry by placing veterinary inspectors at each point of entry and at various points throughout the state.

These changes have been brought about by our present administration. We are indeed fortunate in having as governor his Excellency O. B. Colquitt, who is a staunch friend to the stock man and veterinarian.

He has indeed shown excellent judgment in his appointment of a Live Stock Sanitary Board, the chairman of which the Honorable W. N. Waddell, of Ft. Worth, Texas, stands eminently fitted as a live stock veterinarian, but the man at the helm who has made our present achievements possible and to whom we are looking for future developments is our state veterinarian, Dr. E. R. Forbes, whose extensive experience in the field of veterinary science amply qualifies him for the trying duties of his present office.

## WARBLE FLY EXPERIMENTS.\*

BY SEYMOUR HADWEN, AGASSIZ, B. C.

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I am pleased to say that this work has progressed very satisfactorily, and I am now in a position to give practically the whole life history of these parasites. I cannot give you all the details of course, but will content myself with giving a summary. Since last autumn I have been getting a certain number of gullets shipped up to me from P. Burns & Co. at regular intervals, my idea being to watch the larvae and see which way they were heading. The length of the gullets was taken and the larvae counted. It was found at first that the larvae were ascending and descending in about equal numbers. Little by little they were found lower down in the gullet, and the majority heading for the paunch, until the middle of March when they disappeared. At this time I went down to P. Burns & Co. and searched for larvae in the carcasses. I was rewarded by finding several in the spinal canal and others just emerging onto the back. One or two were found in the posterior foramen of the vertebrae, and several in the dorsal region, about in the region of the ninth rib. On the second visit to the abattoir a steer was found in which the track of the larva was plainly visible along the posterior border of the ninth rib. In following up this track (which was of a greenish color), it was plain to see that there were only two routes for the larva to reach the back, either through the posterior foramen, which seems the easiest, or else under the transverse processes. Once in the canal they may simply use it as an easy mode of reaching the lumbar region, and upon their emergence there would be comparatively little muscle above them. This is only a brief account of what we have done. Dr. Bruce is taking a keen interest in this, and has made some careful dissections.

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\* Some observations recently communicated to Dr. Fred. Torrance, Veterinary Director General of Canada, by Dr. Hadwen, of staff. Dr. Torrance kindly sent them to the REVIEW.

He is also preparing some drawings. With your sanction he and I propose to write a little paper on this phase of the work.

EXPERIMENTS ON OVIPOSITION AND MODE OF ENTRANCE OF  
LARVAE INTO THE BODY.

On April 15th two *H. lineatum* were captured ovipositing on my cattle. This is a full month earlier than any previous record, and I consider this capture quite important, inasmuch as it lengthens the warble season so very much. I am inclined to think also that it leads one to doubt Professor Carpenter's muzzling experiment, for the reason that this climate and that of Ireland are very similar. The reason we have not made similar captures in other years is, I believe, simply because of lack of close enough watching. I have captured thirteen flies since that day, and could have got a number more. Two of them were caught by hand on animals which were lying down. This fact alone will convince you how little annoyance this fly gives to cattle. Only a few of the calves, and then only slightly, were annoyed. They only ran for very short distances.

This year I have succeeded in hatching out a large number of eggs, and as soon as they hatched, started at once to see if they would penetrate the hide. I placed some on a calf and began to watch them, as in previous experiments they showed signs of burrowing, but what with the movements of the calf and a drying wind I thought I would try some other scheme to get them to penetrate the hide. Accordingly, I snipped off a small piece of skin and put it on a slide, and then placed some larvae upon it. They at once began to burrow as they did upon the cow. I kept the skin from drying out by placing a drop of water occasionally on its under side, and after an hour or two had the satisfaction of seeing the larvae part way under the hide. I repeated this experiment several times, and in one instance succeeded in getting three larvae in more than three-quarters of the way, and the fourth which disappeared completely. Then I tried watching eggs upon the cattle, but without any measure of success at first. Finally I discovered eight eggs on a hair, six of which appeared to be hatched and the other two unhatched.

I snipped off a bit of skin underlying this hair, it was slightly swollen, and on putting it under the microscope I was delighted to find a larva half way into the skin at the root of a hair. This larva I was able to photograph, and though the pictures are not as good as I could wish, still the larva can be plainly discerned. This larva burrowed in deeper afterwards.

Other hairs on which I found eggs were marked and examined at frequent intervals, and one batch of about fifty quite intact the night before had disappeared completely by morning, and I found several scabs together with an oedematous swelling. Thinking that the cow had simply been rubbing herself, I paid no attention, but next morning an exactly similar occurrence was noted, then I began to take notice and found similar scabs and pimples on the other cows. Curiously enough, the day before Mr. Moore had asked me to look at a couple of his cows. They had sore places on their udders. He said, "The same trouble we had last year and the year before has returned." After finding my own cows affected like Mr. Moore's I put two and two together and returned to look at his cattle. On some of the sore places I found eggs of *H. lineatum* and thus settled the matter. Yesterday Dr. Knight called. I took him to see the cattle and asked him what was the matter. He said, "My cows have the same rash and swellings." I asked him what he thought caused them. He replied that he had always taken them for fly bites. We observed that there were spots also on the tail. The condition is not very serious, but in previous years I have noted serious sloughs which were hard to heal. The eruption begins by an escape of serum which sticks the hair together, then the patch of hair dies and can be pulled off, leaving a raw spot usually about the size of a ten cent piece but often larger. In other cases a little pus can be seen in the superficial layers of the skin; again in other cases oedematous swellings occur as large as one's fist, sometimes hard, sometimes soft and diffuse. All these lesions depend on the sorts of bacteria that are introduced, at least this is the way I look at it. For some time Cadeac had held to the belief that black-leg gains entrance through the cavities in which the

warble larvae lie on the backs of cattle. I don't think he is correct in this, as the cavity in which the larva lies is well walled and therefore bacteria could not gain entrance. But now I see how black-leg and anthrax can be inoculated, and if my memory serves me the spring was always the time when reports and applications for vaccine used to come into the laboratory.

I should be very glad if you could let me have your ideas on this subject, possibly the records at the laboratory would show this.

The rash causes a good deal of irritation, and the animals are disposed to rub themselves. In the experiments where a portion of skin was removed, the animals seemed to suffer no pain, in fact seemed to appreciate the scratching of the part. In reading over Carpenter's article and description of the penetration of the larvae, he made mention of pimples occurring on the following day, but he says that he has never observed *H. lineatum* ovipositing, therefore cannot have seen any of these symptoms. I have observed the cattle licking and rubbing those parts, but however as the larvae must have penetrated before the irritation appears, they cannot swallow any of the larvae; if they did so I am of the opinion that they could not penetrate the gullet, seeing that they seem to need the support of a hair and also a hair follicle to gain entrance to the body. Moreover I find that immersion in water seems to be detrimental to them. When they emerge from the egg they are coated with a viscid sort of material which seems to prevent them drying out rapidly. However, unless they gain access to moisture under the skin I have seen them die, or at least become very weak in half an hour when exposed to the dry air, and in those larvae which I hatched I found that after an hour or two they seemed to lose vitality. These larvae were hatched in vials which I kept in my waistcoat pocket, and in which there were a bit of damp paper. All these points will be fully explained when I get together my notes.

Professor Carpenter, or rather Mr. Hewitt, has undoubtedly seen the larvae going through, and I attribute the reason of my previous failures to having shaved the skin, which deprived



the larvae of the support of the hairs, and although they tried to burrow, they probably chose wrong places, seeing that when they crawl down a hair they are invariably led to the hair follicle. Glaser's failure I attribute to like reason. As regards the cutaneous lesions. I have good reasons to believe that this is a new discovery, and would propose the name of *Hypodermal Rash*.

PROPOSED PICTURE GROUP OF THE VETERINARIANS OF THE STATE OF NEW YORK.—Uniform with the engraving of the veterinarians of the State of New Jersey, recently published, and mentioned on page 475 of this issue of the REVIEW, plans have been perfected and now under way to make a similar work of the representative veterinarians of the State of New York, to contain at least ninety per cent. of all the legitimate practitioners of the state.

Every care will be exercised that the work shall contain only the portraits of the regular and registered men, and is to come under the supervision and approval of a special committee as to form, title, general grouping, etc., of Doctors Harry D. Gill, Robert W. Ellis, C. E. Clayton, W. Reid Blair and Robt. S. MacKellar, of New York; E. B. Ackerman and Geo. H. Berns, of Brooklyn; Chas. S. Chase, of Bay Shore; John F. DeVine, of Goshen; Otto Faust, of Poughkeepsie; J. G. Wills, of Albany; Pierre A. Fish and H. J. Milks, of Ithaca; W. L. Baker, of Buffalo.

The portraits of Professor Liautard and those of the New York State Colleges, foremost along the educational lines of the profession, will be accorded special representation in the engraving, also some twenty portraits of our worthy deceased; the object being to make the picture as thoroughly representative as possible.

Besides the names on the picture to represent the men, the colleges and years of graduation will also appear.

As such a picture as this is only made once, is a professional as well as semi-historical work, and is a thing for all time, much interest is felt by those who have given it their sanction, and it is hoped all of the regular practitioners will join.

One of the specific conditions is that the work shall contain at least ninety per cent. of the members of the New York State Veterinary Medical Society.

A. V. M. A. meeting opens at Oakland, Cal., August 30.

## SUGAR BEET POISONING.

BY B. F. KAUPP, M.S., D.V.S., PATHOLOGIST, FORMERLY OF THE COLORADO  
EXPERIMENT STATION.

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After the sugar beet crop is harvested there is valuable feed for live stock left in the fields, which is in most instances utilized by pasturing cattle, horses, sheep and hogs. This pasturage consists of the tops, a portion of the beet left on the top during the process of topping and parts of the beets broken during the digging process by the digger.

If the live stock be turned in for only a part of the day and this roughage be made only a part of the feed, then no ill effects result and the pasturage proves profitable.

The beet pulp from the sugar factory is made use of for fattening, principally cattle and sheep. This is fed with alfalfa hay and to this may be added corn or corn and bran. Some ill results have resulted from the injudicious feeding of mangle wurzels and sugar beet pulp and pasturage and it is the intention to discuss these difficulties that have been studied by the writer in the hope that these mistakes in feeding may be avoided.

### POISONING FROM FROZEN BEETS.

In the fall of 1908 the writer was called to investigate an outbreak among horses near Farmers Spurr, Colorado. There were eight horses upon the ranch, three had died and two were sick at the time of the first visit. These horses showed some elevation of temperature with some disturbances of respiration and pulse. In later stages the animals were off feed, became sluggish, showed weakness in the hind quarters, finally down with evidence of cerebral disturbance and death usually followed in from seven to ten days after the onset of the first symptoms.

A blood study showed no changes in the hemaglobin, erythrocytes or leucocytes.

The autopsy showed a sub-acute gastro-enteritis which involved to a greater extent the great colon. There was cloudy

swelling and congestion of the kidneys and liver. The brain appeared somewhat hyperemic, showing the effects of the absorption of toxic products from the intestinal tract. These later findings were confirmed by a microscopic study of the tissues.

It was found that these horses were pastured in a beet field. This was late fall and as the weather was mild the beets and tops remaining in the field froze each night and thawed in the daytime. In short they were in a partially rotten condition, being attacked by various fungi and bacteria, some of which proved to be producers of toxic substances.

A neighbor pasturing on a similar field also lost several horses.

Beets and beet tops that repeatedly freeze and thaw in the field and become moldy and partially rotted are always to be regarded with suspicion. When beets and beet tops are attacked by certain kinds of molds and bacteria poisonous products result which cause structural changes of the vital organs and death in many cases. This is true of any root crop.

#### INJUDICIOUS PASTURING.

Beet tops have been found to contain more or less oxalic acid, as well as beetic acid. When animals are turned on a pasture and allowed to gorge themselves trouble sometimes follows.

*Horses.*—A description of one case with structural changes found at autopsy will serve to illustrate this condition.

An eight-year-old bay mare, used for general ranch work, and previously on dry feed consisting of alfalfa hay and oats, was turned in the beet field after harvest of the crop. The animal was accustomed to dry feed and finding the succulent forage very palatable engorged herself. The digestive tract was accustomed to handling dry feed and was not prepared for this sudden change to succulent feed, and feed containing an excess of sugar. The result was indigestion and flatulent colic followed.

The animal showed signs of colic, up and down, rolling, perspiring and tympany. The tympany was repeatedly relieved

by aid of the trocar and canula. The respirations were accelerated and labored partially on account of pressure on the diaphragm due to distension of the bowel caused by gas as a result of the unnatural fermentation. The pulse became weak and fast, finally an elevation of temperature and death of the animal at the end of eighteen hours.

Upon autopsy the stomach was found to be gorged with masticated beets and beet tops. There was an acute gastritis also an enteritis. The great colon as well as the caecum and stomach contained a sour smelling fermenting mass of beet pulp (masticated beets and tops). The liver was congested and upon microscopic examination showed cloudy swelling. The kidneys showed marked parenchymatous degeneration and active and passive congestion. A microscopic study of the kidneys showed cloudy swelling with necrosis of large areas of cells evidenced by a total disappearance of the cells nuclei.

When horses are accustomed to dry feed they should be turned on the beet pasture for only a short time each day as an engorgement with beet and beet tops is very dangerous.

*Hogs.*—The writer has investigated several herds of hogs pasturing on beet fields and from which there was considerable loss.

It is usually where hogs are changed suddenly to the beet pasturage, with no other feed, as alfalfa pasture or corn or corn and shorts, etc., that these losses occur. The beet pasture should furnish only a part of the ration. The writer has always found in these cases that the stomach is gorged with masticated beets and beet pulp. There is always present an acute gastritis and also enteritis (gastro-enteritis). The contents is a sour smelling fermenting mass.

Like in the case of the horse, the excessive sugar and possibly other products cause parenchymatous degeneration of the kidneys and liver.

*Cattle and Sheep.*—These animals suffer in much the same manner as the horse and losses may occur if not properly handled.

### POISONED BY FEEDING MANGLE WURZELS.

While mangle wurzels are excellent feed, yet injudicious feeding may prove disastrous, as will be illustrated by the study of the following band of sheep.

A band of 4,000 sheep were brought from the range and placed on mangle wurzels and alfalfa hay. The mangles were fed to them unlimitedly with the result that the sheep, not being accustomed to the palatable succulent feed with high sugar content, gorged themselves. The result was that by the end of the first twenty-four hours nearly one hundred sheep were dead. A careful autopsy showed the liver and kidneys in the same condition as the horses and hogs, namely: Soft inconsistency with marked parenchymatous degeneration.

Figure 1 shows a drawing of a section of a kidney of a sheep from this band. *a*—Shows the renal cells in a marked state of albuminoid degeneration, and *c*—an area in a state of necrosis. It will be noted that the nuclei have entirely disappeared and the cytoplasm assuming a granular mass.

Figure 2 shows a section from the liver, showing marked albuminoid degeneration.

### INJUDICIOUS FEEDING OF BEET PULP.

One herd of cattle was studied in which the animals were suffering from being fed too large quantity of beet pulp.

These cattle were fed beet pulp and alfalfa hay. After a lapse of about five or six weeks some of the cattle were noted to not be doing so well as the balance of the herd. They began to lose weight, became gradually thinner and finally dying.

A careful autopsy was held on three of these cases. Jaundice was present in all. There was a fatty degeneration of the vital organs, especially the liver and kidneys. The liver was somewhat smaller in size and rather leathery in consistency. Confirmation of the gross diagnosis was made by microscopic examination.

### CONCLUSIONS.

Beet fields furnish excellent feed if pastured judiciously. It should furnish only a part of the ration.

Beet pulp is excellent feed but should constitute only a part of the ration.

If animals are allowed to gorge themselves with beets and beet tops poisoning may result.

Moldy and partially rotten beets and beet tops should not be used for feed. They may prove poisonous if attacked with certain fungi and bacteria.

Mangle wurzels make excellent feed but should constitute only a part of the feed.

Sugar beet pulp fed gradually in excess for long periods cause fatty degeneration, especially of the liver and kidneys.

Excessive feeding of beets and beet tops may cause gastroenteritis with parenchymatous degeneration of the liver and kidneys.

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NEW YORK STATE VETERINARY MEDICAL SOCIETY: We had hoped to be able to publish a complete program of the approaching meeting at Ithaca, August 3, 4 and 5, but the officers have not been able to get the details of the program completed up to the time of this writing, although we can assure our readers that the program will be an excellent one. We have recently received a letter from our esteemed friend, President Pierre A. Fish, however, in which he informs us that Commissioner of Agriculture Wilson expects to be present and give an address, and that a number of papers have been promised, and more will be forthcoming, as the members of this organization are usually pretty faithful to the officers in that respect; and President Fish says: "It is planned to have a better clinic than ever." Any one who has ever been present at a clinic of the New York State Veterinary Medical Society, appreciates the significance of that statement; as for years men in the profession in neighboring states have attended the New York meetings on account of the excellent clinics. President Fish also expresses the hope that a large proportion of the ladies will attend this meeting, and says that arrangements are being planned for their entertainment. Like all ambitious presidents, Dr. Fish is hoping for an increase in the membership, and trusts that each member will bring in at least one new one. All are welcome at the New York State meeting whether members or not, both from without and from within the state.



## CHLOROFORM ANAESTHESIA BY INTRAVENOUS METHOD.

BY M. H. REYNOLDS, OF THE UNIVERSITY OF MINNESOTA AND STATE LIVE STOCK SANITARY BOARD.

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While a senior veterinary student, the writer had occasion to chloroform a subject intended for dissection. This particular experiment is here given under Trial No. 1. The results in this case were so perfectly satisfactory that the thought occurred that possibly this method might be adopted for routine surgical procedure.

In as much as there does not appear any reasonably probability of my being able to complete the experiments herein reported or to conduct a long series of experiments upon which one would be justified in basing conclusions, I have thought it best to publish the following data. This may possibly serve as a preliminary experiment upon which some one else may base larger and more conclusive work.

TRIAL NO. 1. CHLOROFORM. Ames, Iowa, October 20, 1889. Aged brown gelding, dissection subject, estimated weight, 1,000 pounds.

Chloroform, 6 c.c., was injected by ordinary hypodermic syringe into the right jugular. This horse went down very suddenly; partially recovered, and tried to rise in 7 minutes. This injection was repeated and the horse went down again very promptly. There was practically no struggling in either case and the old horse would evidently have recovered very nicely from the second injection had he not been killed for dissection purposes.

TRIAL NO. 2. CHLOROFORM. May 15, 1890, Bay mare, 4 years old, Clyde, 1,200 pounds.

This mare was seriously injured by a stable accident and practically worthless. Chloroform 6 c.c. was injected into the right jugular, the patient being already down. The mare struggled for a moment but soon grew quiet. Twenty minutes after the first

injection she was given additional 12 c.c. of chloroform, and remained quiet for some time. Respiration continued at nearly normal rate; the pulse was somewhat disturbed for a short time after the injection. Fifteen minutes later the mare was purposely destroyed by injection of 24 c.c. chloroform into the jugular.

TRIAL NO. 3. CHLOROFORM. May 10, 1894. Sorrel gelding, 13 years old, medium flesh, weight about 950 pounds.

Five c.c. chloroform was injected into the left jugular with the horse standing. This subject betrayed some temporary excitement, but did not go down. Ten minutes later this horse was given additional 10 c.c. in the same vein. He moved directly backward a few steps, swayed a little and went down, becoming almost instantly quiet. Respiration remained good, pulse slightly disturbed. This horse tried to rise in 15 minutes and succeeded in rising at the end of 20 minutes. No after effects.

TRIAL NO. 4. MORPHINE AND CHLOROFORM. For this I used same horse as in Trial No. 3. May 15, 1894. At 4 o'clock this horse was given 3 grs. of morphine hypodermically. At 4.20, 5 c.c. chloroform was injected into the right jugular. The horse soon began to tremble, showed an unsteady gait and excitement, but did not go down. At 4.30 I injected an additional 10 c.c. chloroform into the same vein, the patient went down immediately, struggled a little and soon became quiet with respiration approximately normal. The pulse was hurried at first and somewhat irregular, but soon became regular and satisfactory. The horse remained perfectly quiet for about 15 minutes. No after effects.

TRIAL NO. 5. CHLOROFORM AND MORPHINE. 1894. This experimental animal was a brown pony mare of about 700 pounds, 5 years of age. She was losing the right front foot as a result of high neurectomy, the patient having injured the foot in a runaway subsequent to operation. It may be an interesting sidenote to record the fact that the hoof came off about 12 days after the runaway and about 27 days after the operation.

At 10 a. m. 3 grs. morphine was injected hypodermically. At 10.20, 10 c.c. chloroform was injected into the left jugular. The

patient moved directly backward a few steps, staggered and went down. Pulse was irregular for a few minutes and at times somewhat weak, but at no time alarming. Respiration was disturbed at first, but soon became quite regular. Chloroform administration was continued by the nose for 5 minutes and produced a very profound anaesthesia lasting for about 30 minutes. The patient remained down, quiet and rather sleepy until 12.30 p. m., then got up and went to feeding with no unusual after effects.

TRIAL NO. 6. CHLOROFORM AND MORPHINE. Same subject as in Experiment 5. At 4 p. m. of same day as Trial No. 5, morphine, 3 grs., was given hypodermically. At 4.20 chloroform, 10 c.c. was injected into the right jugular. The patient went down almost instantly, struggled for a moment and became quiet. No chloroform was given by the nose in this experiment, but the patient remained quiet for about 15 minutes and continued in a quiet, stupid condition until 5 o'clock, although the horse could apparently have arisen at 4.45. The pulse and respiration were good throughout. No after effects.

TRIAL NO. 7. ETHER. Same patient as Trials No. 5 and No. 6. June 26, 8 a. m. An injection of 10 c.c. ether was made into the right jugular vein without any evident effect except heart and lung stimulation.

TRIAL NO. 8. CHLOROFORM. 1894. Bay horse weighing about 1,000 pounds and 13 years old.

This horse was thin but lively and in good health. Bursatee sores on the right posterior ankle. At 3.14 p. m. an intravenous injection was given of 6 c.c. chloroform. The horse was considerably excited and moved around in a peculiar condition of intoxication. Pulse and respiration were hurried but otherwise normal. The patient soon became quiet, remaining on his feet. At 3.18 p. m. an additional injection of 6 c.c. of chloroform was made with about the same results as at 3.14. At 3.25 p. m. the horse was given an injection of 12 c.c., which probably *missed the jugular*, as shown by subsequent developments. At 3.30 p. m. another dose of 12 c.c. of chloroform was given intravenously. The horse went down almost immediately and was very easily

controlled while down. He would have then taken chloroform by inhalation easily and without artificial restraint. Pulse was at 84 and respiration at 18 to 20 while the horse was down. All unusual symptoms soon disappeared and the horse was turned out in a lot. He was put in a stall at 6 p. m. and at this time was noticed to be coughing occasionally. This experimental animal was found dead in the stall at 9 p. m. after apparently having done considerable struggling.

#### CONCLUSIONS.

It is evident that no safe conclusions on an important question could be based on such a limited experiment.

It was found desirable to control these experimental animals by means of a halter with the rope passed through a ring or around a post for example, as after a full dose, experimental animals would almost invariably try to move rather rapidly backward but if restrained would simply sway a little and then go down.

Any possible practical use of this general idea would apparently be limited to either (1), a temporary anaesthesia for brief operation lasting only a few minutes, or (2), as a very convenient way of avoiding the excitement period of the usual chloroform anaesthesia and the necessity of casting harness or hobbles.

If future experiment should indicate this procedure is safe enough for practical use, anaesthesia for the longer operations would of course be conducted very easily in the usual way.

Anyone with an experimental turn of mind is invited to carry these experiments further and report results.

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DR. J. D. FAIR, Resident State Secretary of the A. V. M. A. for Ohio writes: I do not remember whether I paid my subscription or not. However, you will find enclosed a check for three dollars which amount you will please place to my credit. I have every volume except Vol. I. I do consider the AMERICAN VETERINARY REVIEW a veterinary journal of great merit and of the highest order.

## **OOPHORECTOMY OF CATTLE WITHOUT THE INTRODUCTION OF THE WHOLE HAND INTO THE ABDOMINAL CAVITY.\***

BY R. R. DYKSTRA, D.V.M., SURGEON AND CLINICIAN, DIVISION OF VETERINARY MEDICINE, STATE AGRICULTURAL COLLEGE, MANHATTAN, KANSAS.

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The objects of spaying cattle are: 1st. That they may fatten more readily; this is largely due to the fact that after removal of the ovaries the excitement incident to oestrus is largely done away with, and the animal becomes quieter and more phlegmatic, thus utilizing most of the food for the production of flesh, instead of wasting it in the expenditure of useless energy.

2nd. The meat is of a finer quality, being more tender and juicy, and as a whole very closely approaches that of the prime well-fed steer.

3rd. About six weeks after the third or fourth calving, spaying is frequently practiced to lengthen the duration of the lactation period. Although the expectations of the earlier veterinarians have not been entirely fulfilled, still the operation for this purpose has been sporadically revived and abandoned; at the present time it has again been relinquished, and is seldom performed for this purpose.

4th. Finally certain disease of the generative organs, and particularly the one referred to as nymphomania; in this condition the animal is very restless, with frequent bellowing and sometimes becoming so vicious as to attack people. The milk secretion is reduced, is of poor quality and frequently curdles when boiled. The ovaries are generally found to be inflamed, hypertrophied or cystic. Spaying is the most certain method of dealing with the condition.†

Albrecht operated on fifty animals with this object, forty-two were completely cured, in three cases the operation failed, and five cases were only partially successful. After castration the character of the meat improves, the uterine ligaments become

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\* Read before the Missouri Valley Veterinary Medical Association, at Kansas City, Mo.

† Simple rupture of cystic ovaries, per rectum, is also recommended.

tense, and the milk secretion and the fat percentage is increased.

#### FORMER METHODS OF OPERATING.

I. *The method employed to a very large extent (i. e.),* laparo-oophorectomy consists in making an opening about four inches in length, or large enough to admit the entire hand, in the region of the flank. After inserting the hand and grasping the ovary it is removed with an ecraseur, spaying shears, or emasculator. The wound must afterward be closed with sutures.

This method of operating necessitates a large opening, with the subsequent opportunities for peritoneal infection or abscess formation in the region of the wound, or the adhesion of the rumen to the abdominal wall, resulting in digestive disturbances. There is grave danger, when sharp cornered shears are used that the intestines will be injured or hemorrhage from the utero-ovarian artery result; in other cases all the ovarian tissue is not entirely removed, and frequently in making the primary incision one of the branches of the circumflex iliac artery is compromised, resulting in hemorrhage which is not necessarily dangerous, but which must be controlled before the operation can proceed, resulting in the loss of considerable time.

II. *Charlier's Method.* This consists in incising the upper vaginal wall, introducing the fingers, grasping the ovaries and removing them with an ecraseur. Modifications of this method have been recommended by Colin, Richter, Hürliman, etc.

This method of operating is unquestionably a valuable one, and is to be highly recommended in animals where the vagina is of sufficient size to admit the hand. It cannot be performed in young, or small and undersized animals; it requires a good deal of time to perform, but does not require much after-treatment.

III. *Operating by the flank method,* without making a large incision and requiring the introduction of one finger only:

For this procedure the animal should be in rather thin condition and preferably starved out. It is practically impossible, or at least very difficult, to operate successfully if she is fleshy. It is to be borne in mind, however, that most of the animals



presented for spaying are in the former condition. Instruments needed are a scalpel, a pair of six-inch curved scissors, and a pair of compression forceps.

The animal is cast in lateral recumbency with either the right or left side uppermost. The upper hind limb is drawn strongly backward; this is an important step, as it outlines the point of incision, the latter being made along the anterior border of the tensor fasciae latae muscle. The hair should be clipped and disinfected with any of the reliable disinfectants.

Before describing the operation I wish to call attention in a brief way to the anatomy of the parts involved: "The uterus of the cow is not so advanced in the abdominal cavity as that of the mare, neither is it so long or large. Instead of curving upward towards the lumbar region, as in the mare, it bends down in the direction of the floor of the abdomen. The broad ligaments are also larger than those of the mare. They are like a triangular web, one angle being under the uterus, and the other two angles are attached to the tuberosities of the ilium; the free margin measures about a foot." We can notice from this that the free border is closely placed to the internal wall of the abdomen where our primary incision is made.

"It has to be remembered that the ovaries are smaller than those of the mare, that they are situated near the anterior border of the broad ligament, and are about two inches only above the cornua; they are much less forward in the abdomen, and so loosely attached are they that the fingers can readily draw them toward the field of operation."

*Technic:* After casting, placing the animal in the desired position, disinfecting, etc., an incision, about one and one-half inches long, is made through the skin, muscles and peritoneum. This incision is made along the anterior border of the tensor fasciae latae muscle, starting at a point about four inches below the external angle of the ilium, and extending downward for a distance of one and one-half inches. The index finger is passed through the opening thus made, into the abdominal cavity and directed backwards, where the border of the broad ligament can be

distinctly felt; by pressing this against the inner abdominal wall with the finger it can be carried outward through the incision. By carefully drawing up on the broad ligament, the uterine cornua and the ovary is brought into view, the forceps, preferably in the form of an eight-inch compression forcep, placed around its pedicle and the ovary cut off with a pair of scissors. By drawing up on the uterine cornua still held by the compression forceps, and strongly pushing in the abdominal wall, the cornua and ovary of the opposite side is drawn outward and removed in the same way. (If the animal is fat, or not well starved, some difficulty may be experienced in this, or it may even be necessary to go in on the opposite side.) Suturing is not required, because as soon as the upper hind limb is released the skin wound passes forward over the muscle wound, thus effectually closing it.

#### ADVANTAGES OF THIS METHOD OF OPERATING.

- 1st. No difficulty is experienced in locating the ovaries.
- 2nd. Post operative hemorrhage is controlled because the ovaries are brought into full view, enabling the operator to place the compression forceps properly.
- 3rd. No suturing of the wound is required.
- 4th. Digestive disturbances produced by adhesions of the rumen to the abdominal wall are obviated.
- 5th. Peritoneal and wound infections are reduced to a minimum.
- 6th. With a little experience the operation can be performed more rapidly than by any other method.

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DR. J. C. HERSCHBERGER IN CHINA: In a recent copy of the Hamilton, Mo., *Advocate* we read with interest of a letter, from Dr. Herschberger, who is in North Manchuria, China, to his friend, C. C. Hawks, of Hamilton, Mo., in which it is said that the doctor expressed a wish to eat once more at Mr. Hawks' table, as he is tired of bird's nests, rats, mice, etc. The doctor has the comfort of reading the REVIEW each month, at any rate, even though in far away China.

## HOG CHOLERA.

BY F. R. COMBER, B.S.A., D.V.M., FORMER ASSISTANT STATE VETERINARIAN,  
WISCONSIN, SAULT STE. MARIE, MICH.

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There is no more vital question confronting the stock raiser of to-day than the disease known as hog cholera. Synonyms: French pest d'eporce, swine fever, pneumonia enteritis, pig typhoid, Schweinepest—(*German*).

This is an acute febrile disease which as far as is known affects only hogs and which is characterized by extreme contagiousness and high death rate. It is usual to speak of two forms of this disease, *i. e.*, the acute and chronic.

This is because of the fact that some cases of the disease is sudden in its onset and rapid in its course, whereas in others the affected hogs linger for weeks or months before death or recovery. The causative agent is the same in both, the difference being the variation in virulence of the germs and the resisting power of the hogs. Enormous losses are caused yearly in the large hog raising states of the Middle West. Statistics verify the fact that many states lose yearly an average of over \$1,000,000 from the source alone.

The cause of hog cholera is a virus, presumably a germ, according to some authors think it the bacillus cholerasuis found in the blood, urine and other body fluids and passes through a porcelain filter sufficiently fine to withhold the minutest organisms visible through the most powerful microscope. For practical purposes it may be considered a typical germ disease.

The virus gains entrance to the body through the digestive tract or through the broken skin. Infection through the air passages seldom occurs.

The disease is transmitted by the introduction of the virus either directly by the sick hog or any agent capable of carrying contaminated substances from place to place.

Wet, poorly ventilated pens or anything that tends to lower the vitality renders the hog more susceptible to the infection.

Young pigs are more susceptible than older ones, especially when in close quarters.

The period of incubation varies with the susceptibility of the animal, the virulence of the germ and the manner in which the germ gains entrance to the body, and varies from a few days to three weeks.

*Symptoms*—In the acute form the animals die very suddenly in a few hours or at most after a few days sickness.

In the other form (the chronic), the disease runs a longer course.

The pigs fail to come to the trough for feed, refuse to eat, or eat earth or other indigestible substances, have chills and huddle together to keep warm, stand with back arched, hind feet close together, belly tucked in, resent being disturbed, stagger and fall; their muscles and joints are stiff and sore, are constipated, for a few days, they develop profuse diarrhea which persists until death. Sometimes have a hacking cough and breathe fast as result of changes in lungs. They show a pus-like discharge from eyes which often gums lids together. Rise in temperature 104 degrees to 109 degrees F.

The chronic form differs from the acute largely in duration of disease. There is more marked evidence of digestive disturbance, for ulcers usually form in the intestines when chronic cholera is present, sometimes in this form the hogs eat fairly well. Young hogs get stunted and emaciated and hair may drop off. Usually there is considerable reddening of the skin on the nose, ears, abdomen, inside of thighs and pubic region; the redness becomes more intense as death approaches.

*Treatment*—As soon as cholera is suspected, a competent veterinary should be called to make a positive diagnosis.

Vaccinate all hogs with serum if the disease is in your locality. Disinfect and whitewash pens each week with quick lime or some germicidal agent. Feed laxative diet and pasture hogs some distance from highways and streams.

Quarantine for four weeks all hogs brought to the farm.

Post-mortem changes should be looked for as follows: Fre-

quently the skin and underside of neck becomes dark red. The lymph glands are enlarged, congested and of a deep red color. The kidneys are dotted with small pin-pointed blood spots which gives them a turkey egg appearance. In some cases the lining membranes of the abdominal and lung cavities show red spots or blotches, if the disease affects lungs, the organs exhibit changes characteristic of pneumonia and pleurisy.

In chronic cholera intestinal ulcers are usually found, have a dark center and yellow margin and raised above the surrounding surface of the intestine. The heart and liver are normal in appearance.

The serum preparation is of such a nature that it should not be undertaken by farmers themselves, but should be under the control of trained men who have had experience in bacteriology and who are familiar with diseases of hogs. For this reason no attempt has been made to describe the details of the serum production.

It should be understood that the vaccination against hog cholera does not cure every case, for no known biological product has this power. Yet the successes obtained demonstrate that it is the only reliable agent to use. Those who are interested in the subject are urged to co-operate with the state authorities who have control of this work and to assist them in their efforts to reduce to the minimum the mortality from this much dreaded disease. It is only through intelligent co-operation that we can expect to attain a final result which is aimed at in the eradication of hog cholera as a serious menace to the hog raising industry of the country.

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ANNUAL REPORT OF THE MAINE BOARD OF VETERINARY EXAMINERS.—The report of this board was received at the REVIEW office recently, by courtesy of the secretary, Dr. W. H. Lynch, of Portland, and reflects credit upon its members, and upon the veterinary profession of Maine, who are a progressive body of men, ever striving for the uplift of the profession in their state.

## APOMORPHINE.

BY G. H. CONN, D.V.M., PRAIRIE DEPOT, OHIO.

Apomorphine is an artificial alkaloid made by heating one part of morphine with twenty parts of pure hydrochloric acid in a glass tube. This product is put through several purifying processes and is finally crystalized as the hydrochlorate of apomorphine. It does not however contain any of the anodyne effects of morphine.

Apomorphine finds much use in the practice of regular physicians as an emetic in cases of poisoning and other cases of acute inflammations of the stomach where an evacuation of the contents of the stomach are necessary quickly. It is also of great value in the treatment of capillary bronchitis where the mucous is sticky and tenacious and there is danger from carbonic acid gas poisoning; also of value in croup in infants.

It is the use of this drug as an emetic by physicians that suggested its use in cases of choke in the horse from eating oats principally. I have never failed yet to relieve an animal which was choked on oats with the hypodermic use of apomorphine. In from three to five minutes after administration you are able to observe marked retching of the animal, and the contractions may be seen traveling down the oesophagus, very much resembling the contractions that pass down the horse's oesophagus when he is drinking water. This lasts ordinarily from 30 to 45 minutes, and in the majority of cases no depressant action will be seen. It is not advisable however to give it in very large doses to weak and debilitated animals.

Apomorphine causes a slight increase in the volume and rate of the pulse; respiration is increased and sometimes perspiration appears in a couple of minutes after hypodermic administration.

Apomorphine causes emesis through its actions through the nervous system, differing from most emetics which bring about this condition by irritation of the mucous membrane lining the stomach.



Apomorphine may be given in cases of strychnine poisoning as an antidote; in several instances it has been known to check the convulsions and to result in an entire recovery.

It may be used in the horse to relieve choke on oats or other grains and where it is not desirable to resort to surgical means to relieve the condition and also as an antidote for strychnine poisoning. Is also indicated in cases of capillary bronchitis or as an expectorant where the expense does not enter into the consideration.

May be given in adult horses in from  $\frac{1}{2}$  to  $1\frac{1}{2}$  grains to relieve choke. One grain makes a satisfactory and safe dose for the average sized horse. As an expectorant in doses of from  $\frac{1}{4}$  to  $\frac{1}{2}$  grain every 30 minutes till effect and then every one or two hours. In relieving choke the dose may be repeated in one hour if necessary.

Apomorphine will be found of value in canine practice for the same conditions. As an emetic in doses of  $1/20$  to  $1/10$  grains; as an expectorant  $1/60$  to  $1/20$  every 15 to 30 minutes till effect and then every one to two hours.

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SPECIAL ANNOUNCEMENT—A GROUP PICTURE OF THE NEW JERSEY VETERINARIANS OF 120 PORTRAITS TO BE REPRODUCED IN THE AUGUST ISSUE.—We are pleased to announce to our readers that in our August issue next we will reproduce the engraving (picture group) of the veterinarians of the State of New Jersey, recently published by the Imperial Art Company, under the supervision of Mr. J. A. MacClary, its representative.

The picture contains 120 portraits of the New Jersey veterinarians and represents practically all of the regular practitioners of that state.

Considerable study and care was exercised in its grouping to suitably represent those who have been officers in the state society and foremost in promoting the best interest of the veterinary profession in the Garden State.

When the picture appears in the August issue we will extend more detailed comment on the personnel of the picture.

In making your summer plans keep the A. V. M. A. dates open for Oakland!

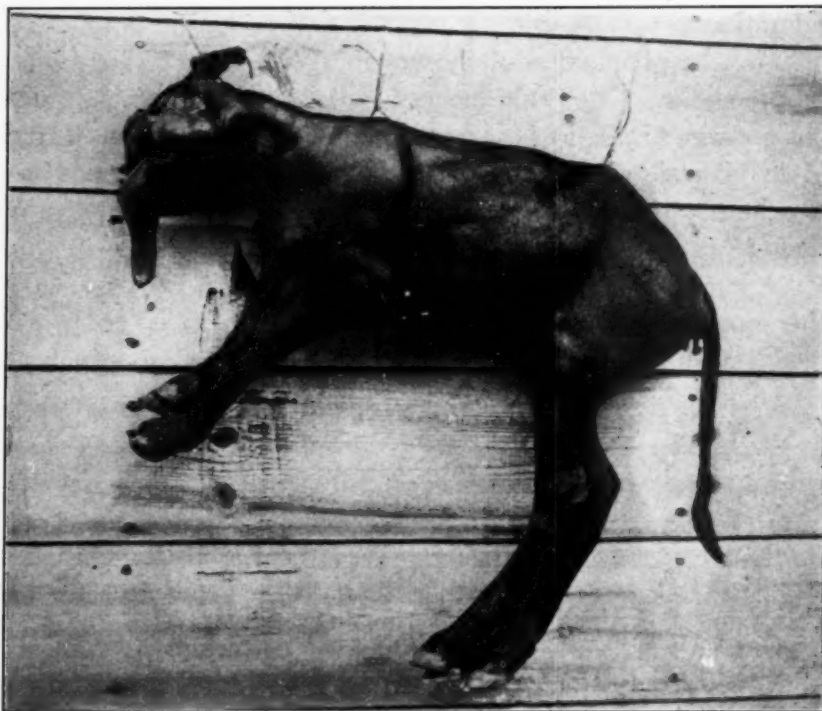
## REPORTS OF CASES.

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### A MONSTROSITY.

By H. A. McINTIRE, D.V.M., Maquoketa, Iowa.

On June 5, 1915, I was called to the farm of Chas. Chapman five miles southeast of Maquoketa to assist a two-year-old angus in labor, and the enclosed photograph illustrates what we found.



The fetus was perhaps eight months advanced. Delivery was comparatively easy. The mother is doing nicely.

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### BOTS—PERFORATION OF DUODENUM—DEATH.

By A. A. LOCKHART, V.S., M.D.V., Carnduff, Sask., Can.

Grey mare about eight years old, weighing about 1,200 lbs., took sick shortly after starting work in the morning. Had eaten usual morning feed.

When seen by writer about 4 p. m. mare was walking aimlessly about, head lowered and ingesta trickling from the nostrils. Breathing was accelerated and abdominal in character. Pulse small and rapid. No evidence of severe pain and no attempt to lie down.

Attempts at syphoning stomach proved abortive. Died at 11.30 p. m.

*Post mortem:* Almost entire contents of stomach in abdominal cavity and folds of omentum. An area of about six inches by three inches of the cuticular portion of the stomach was studded with bots as close together as they could get. On examining the first curve of the duodenum, the heads of two bots were noticed protruding through a perforation in the bowel wall, which looked just as if it had been cut out with a punch; and on making an incision through the bowel wall, the lumen was found filled with loose bots. A large teacup would have been required to hold them all.

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## INTESTINAL OBSTRUCTION IN DOG.

By CRITTENDEN ROSS, D.V.M., New York, N. Y.

A Yorkshire terrier was presented at the office for treatment, with the history of not having eaten anything for several days. The client thought the dog's bowels were in good condition, but stated that he had vomited for the past two days. Upon examination it was found that the dog had no elevation of temperature, but the eyes looked dull, and the dog was drowsy.

Obstruction being suspected, a mild laxative and stimulating tonic was prescribed with good results. After the second day the patient was lively and began taking nourishment. This, however, only lasted two days, when the little patient died. An autopsy revealed, just anterior to the coecum, a small piece of roofing tar, the diameters of which were  $\frac{3}{4} \times \frac{5}{8} \times \frac{3}{8}$  inches, and the bowel wall for some distance anteriorly, appeared markedly inflamed; and a portion even necrotic. From the above history and report, also the fact that the beginning of the duodenum was more inflamed than the rest of the organ, I assume that this object was lodged in the S shaped curve, causing the first trouble; and that its passage onward to the above mentioned point, accounts for the temporary favorable symptoms.

## SIX SUCCESSFUL CRYPTORCHID CASTRATIONS.

By FRANK L. BAKER, Gouverneur, N. Y.

The accompanying photograph represents six successful castrations of cryptorchids in six consecutive days, May 7 to 12, 1915.



Toledo, Ohio, June 26, 1915.

### SPECIAL NOTICE.

DEAR DOCTOR—The Toledo Clinical Laboratories will be closed from July 8th to October 10th inclusive, during my visit to the West, Hawaii, China and Japan, at the latter places for special study. This notice carries another message, that this laboratory closes for a time each year, takes time and money to ascertain what is new and of value in the East, bring to you the benefit of such knowledge that cannot be secured in any other way.

Compare my method with other services, and see what it means to you and your patient. All Wassermanns, renewals of tuberculin, vaccines, routine specimens must be in not later than July 6th. In closing this, my 12th year of service to you, let me express my full appreciation and thanks for the steadfast support given me, which has enabled me to bring the latest and best to you.

Yours fraternally,

R. C. LONGFELLOW, M.D.

## ABSTRACTS FROM EXCHANGES.

### ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

**IODINE IN TREATMENT OF FOOT CASES** [*Lieut. G. F. Stevenson, M.R.C.V.S., A.V.C.*].—The cases were due to various causes, the majority punctured wounds due to nails picked up or by nails of shoes being cast, by pieces of glass or by pricks in shoeing. The treatment has been adopted in all cases as a routine method. Remove the foreign body if one was present, give exit to the pus and free drainage, remove all underrun horn, cleanse the part with a piece of clean *dry* cotton-wool, apply tincture of iodine *without* any previous washing, cover part with a lump of clean tow soaked in an antiseptic oil dressing, and after replacing the shoes, keep the tow in place by two bars of hoop iron placed crosswise across the foot and themselves maintained in position by the shoe. Many of the horses treated by this method have had to stand in deep mud, but in no case have there been any untoward effects. In many cases the horse has trotted sound on the third day, in slight cases, and those found early, sooner than this. By this treatment, out of 62 cases, 55 were returned to duty in average in 4 days, four were transferred sick, and three destroyed because of necrosis of the os pedis in two and injury to the navicular sheath in the third.—(*Vet. Journ.*)

**FATAL HEMORRHAGE IN THE STOMACH OF AN AMERICAN BISON** [*Guil F. Marais, B.A., B.Sc., M.R.C.V.S.*].—Female American bison, six years old, was in the Zoological Garden of Pretoria. She had had cough, recovered and was suddenly taken ill. She grew weak, had great shivering fits and died. At the postmortem were found a large amount of blood-stained liquid running at the nose and from the mouth, general condition good and normal, old pleuretic lesions on the lungs, liver pale and soft, kidneys also. Reticulum had several blood clots and a piece of wire  $2\frac{1}{2}$  inches long piercing the muscular wall and extending into a fairly large blood vessel, which showed signs of hemorrhage. Rumen contained blood and blood-stained food. The endocardium was hyperhæmic.

The fatal hemorrhage was due to the presence of the piece of wire.—(*Ibid.*)

**LUXATION OF THE SHOULDER JOINT IN THE HORSE** [*Juvenal.*].—A six-year-old hunter gelding was a well-known show-ring jumper. In a contest with another horse he was hurt, being thrown heavily on the off-shoulder. When seen by the writer he laid on the ground for some time and when he got on his feet showed a very large swelling over the shoulder joint. He was in great distress, carried no weight on the limb, the toe occasionally touching the ground. Many different diagnoses were expressed by persons round, but that of luxation of the shoulder joint was made by Juvenal, who had the horse removed to a paddock. The animal was then cast and a more careful examination sustained the diagnosis, which might be complicated with fracture of the neck of the shoulder. The treatment is recorded as follows: "Assisted by a strong man who pulled the horse's leg, I steadied myself with my hands on the shoulders of two men and jumped on the swelling in the horse's shoulder, doing this in a direction from the withers. A loud 'click' was the result and told the tale. The horse got up and started to graze." The next day he could walk fourteen miles. Cold water irrigations, soap liniment and Pot. Iodid. frictions, brought a rapid recovery.—(*Vet. News.*)

**A PECULIAR CASE** [*J. F. D. Tutt, M.R.C.V.S.*].—Concise history of a case observed in a bay mare ten years old, which had large sores on the off-hind legs.

These sores discharge a little sanious fluid and had no tendency to heal nor to diminish under treatment. They seemed to be stationary. The animal was malleined twice by the subcutaneous method and in both instances only a temperature reaction was observed—there was no local reaction of any importance. The ophthalmic test was then resorted to and applied twice at separate intervals. A positive reaction was obtained at each time—a control test on the eyes of other horse failed to give any reaction. The mare was killed—careful examination of the lungs revealed no glanders lesions—only those of anthracosis and of old pleurisy being present.

The author asks why a doubtful or negative reaction was obtained with the subcutaneous test and a positive with the ophthalmic.—(*Vet. Journal.*)

**TOXIC ENTERITIS AND CONSTIPATION IN DOGS** [*G. Mayall, M.R.C.S.*].—First Case: Rough haired fox terrier vomits and passes pultaceous blood-tinged faeces. His temperature is 103



degrees F.—mouth in bad condition because of loose and decayed teeth. The next day the temperature is up to 104 degrees.  $3\frac{1}{2}$  pints of warm water, with  $1\frac{1}{2}$  drams of salt to a pint of water, are injected up the rectum, with the dog's mouth tied up, his hind feet held up and the fore feet resting on the ground. Greenish slime and particles of food were vomited five minutes after the injection was given. Teaspoonful of liquid paraffin was given and kept down. The next day the temperature is down 101 degrees F.—dog seems better. He has taken some food—eats more the day after—gets up, walks and eventually recovered. The condition of the bowels was regulated with occasional doses of paraffin.

Second Case: Large size Airedale dog has been vomiting and had no passages for four or five days.

He had two quarts of salt water until he vomited clear fluid. He then had a dessertspoonful of liquid paraffin. Next day he had passed fairly copious motion. Recovery followed.—(*Vet. Journal.*)

ABSCESS IN OESOPHAGO-LARYNGEAL REGION [*J. Schantyr.*].—On the anterior and right side of the upper third of the neck of a four-year-old dog, there is a slightly painful and fluctuating swelling. It extended from the intermaxillary space to the posterior wall of the larynx. Pressing it upwards, a long fluctuating elevation appeared in the mouth, on the right side of the tongue, and then the external swelling had become smaller. The temperature of the dog was 102.8 degrees F. An abscess was diagnosed and greyish green pus was evacuated. The cavity of the abscess was composed of two parts, which communicated with an opening 1.5 c. m. wide. The anterior part was situated on the lateral side of the head of the oesophagus and of the larynx. The author considers that the abscess was a purulent infected cyst.—(*Ibid. and Rec. of Scientific & Practical Medicine.*)

CASES TREATED WITH ANTI-STREPTOCOCCI SERUM (polyvalent) [*E. Wallis Hoare, F.R.C.V.S.*].—I. *Strangles*: Aged valuable thoroughbred brood mare had strangles well developed. Submaxillary gland swollen, a swelling extending along the facial region to temporo-maxillary articulation. Muzzle and nostrils much swollen. Moving of the jaws difficult. Prehension of food impossible. Eyelids swollen. Temperature 103.5 degrees F. One ounce polyvalent anti-streptococci serum (P. D. & Co.) is injected hypodermically. The next day temperature down, 101 de-

grees F. Swellings reduced. Food is taken. Another ounce serum is given. The day after temperature is 100 degrees F. Abscesses are matured. On the eighth day, all symptoms have subsided. A little chlor. pot. in drinking water and belladonna electuary were added to the treatment.

2. *Metritis complicated with mastitis*: Aged brood mare, within three months of her normal parturition, foaled. Placenta was retained and left. Four days later this was putrid and still firmly attached. It was removed, uterus disinfected and pessary of chinosol and sal-antisepticus introduced in the uterus, which was kept washed with disinfecting fluid. The discharge was foetid and there was great straining. Temperature 102 degrees F. On the fifth day the mare showed difficulty in moving, especially in hind limbs. Acute mammitis set in. The thermometer went up to 104 degrees F. One ounce of polyvalent (P. D. & Co.) anti-streptococci serum was injected. Udder was fomented. Six hours after, the temperature dropped to 102 degrees F. The next day marked improvement took place and continued without further treatment.—(*Vet. News.*)

ONE MONSTROSITY—TWIN CALVES [*J. H. Bennett, M.R.C.V.S.*].—A cow was said to have calved and put her womb down. It was a Dutch cow. She had one well developed calf by her side and another (this was of "considerable size"), with all four legs lying close together at the shoulders. The abdomen open and all its viscera external to the body, the pelvis open, spine bent back at about its middle so that the pelvis was over the shoulders." The whole formed a mass which seemed almost impossible for the cow to have given birth to it without aid. The information was then given that when the cowman saw the inside of the calf coming he thought that the womb was coming down, but as the delivery went on he gave little assistance and the mass came away. The cow remained perfectly well.—(*Vet. Record.*)

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#### FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

A PTEROCERCOID LARVAE IN A PIG [*Prof. E. de Ratz*].—A certain number of larvae of cestods living in man and animals are already known, but many are still ignored. There are numerous cestods whose development has not yet been studied and of

which the larvae are unknown. Among those are the *Botriocephalids*.

Besides that larvae of cestods have been described whose adult forms are unknown.

Prof. de Ratz had found three times in pigs a larva of cestod still unknown. In the intermuscular connective tissue he has found a worm, filiform, white, yellowish, rolled upon itself. In other parts, the parasite was lodged in a kind of canal in an hemorrhagic center.

The next year the same parasite was found in the lard, over the muscular layer. Finally the third time it was in the muscles of the thigh, in the center of white yellowish nodule, of the size of a pea.

These forms had the filiform aspect, were of a very pale yellow color. Placed in water they become ligulated, wider, but shorter and while moving they seem to have on their border little festoons. To the naked eye, they were evidently cestods. The author has named it *Sparganum Railleti*.—(*Cong. de Path. Comp.*)

FRACTURE OF THE ARTICULAR SURFACE OF THE SCAPULA AND PARTIAL LACERATION OF THE BICEPS BRACHIALIS [*Mr. Gnoth and Prof. Marck*].—A horse being cast, and under the influence of narcosis by chloral, struggled violently and a sudden loud cracking was heard. When the animal was raised he was found suffering from lameness, rapidly getting worse, of one of its anterior legs. His step was very short because of insufficient flexion of the shoulder and elbow joints, but yet the standing of the limbs did not seem altered. The hand placed on the shoulder while the animal was moving felt a marked crepitation and the displacement of a bony piece. The next day the crepitation was less marked, the elbow and shoulder joints were very painful and swollen. The animal was destroyed.—(*Allatorv. Lapok and R. G.*)

CAUSES AND CONSEQUENCES OF CRYPTORCHIDY [*M. Zsamar and Prof. Marck*].—Careful histological researches have shown that most often cryptorchidy is the result of an anomaly of the development, not only due to the Gubernaculum testis, but also to anomalies of the genital organs themselves. The persistency of the testicle in the abdominal cavity is not the result of a want of development of the Gubernaculum testis, but also of the abnormal length of the ligament attached to the testicle and the

body and tail of the epididymis. In the ectopied testicle spermatogenesis has not reached to the state of production of the living spermatozooids, and as a result horses affected with double cryptorchidism are unable to fecundate; besides in a monorchid horse the ability of the producer comes from its normal testicle. Cryptorchidism has little influence on the development of the secondary sexual characters, because the cells with internal secretion are not degenerated.—(*Allat. Lapok and R. G.*)

PARALYSIS OF THE SUB-SCAPULAR NERVES AND SCAPULAR ARTHRITIS IN A HORSE [*Mr. Gnoth and Prof. Marek*].—A five-year-old gelding, runs heavily against a pillar and immediately motor troubles are manifested. At rest standing, the foot rests on the ground only by its border with the foot carried forward. In walking the foot is carried by a half circle with the joints flexed, the border of the foot scraping the ground and the fetlock joint knocking against that of the opposite leg; when the leg is brought back to rest, the shoulder was carried outwards and backwards. Palpation and the passive motions of the shoulder joint give rise to great pains, and also on the level of the sterno-cleido-mastoid and of the biceps brachialis muscles. A rapid progressing atrophy of the whole mass of scapular muscles took place and after seventeen days the animal was destroyed. The post mortem confirmed the diagnosis.—(*Ibid.*)

A CASE OF PRIMARY EPILEPSY IN A TEN MONTHS HEIFER [*Mr. Szsar and Prof. Marek*].—During some fifteen days this heifer had, always in short spaces of times, epileptic spells which decided the owner to have her killed. The post mortem revealed no organic alteration. During the life of the animal it has been observed that she presented peculiar symptoms—the epileptic crisis would appear under the influence of a sudden strong light; after the instillation of atropine only a weak luminous irritation was sufficient to bring on the crisis. While this lasted, the temperature would rise one or one and a half degrees, the pulse and respiratory motions became accelerated but returned to normal from five to fifteen minutes after. The spells would ordinarily manifest themselves spontaneously before meals.—(*Ibid.*)

#### ITALIAN REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

CONGENITAL OCCLUSION OF THE NASAL PAPILLA—CATHERISM OF THE LACRYMAL CANAL [*Doct. Alessandro Luzi*].—

After a concise consideration on the anatomy of the lacrymal apparatus and a few remarks on the occlusion of the lacrymal canal, the author records a case where the catheterism of the lacrymal duct was made from its termination upwards.

A filly about two and a half years old was, when 18 months old, brought to him for what was diagnosed as simple conjunctivitis of the left eye, which was treated with warm lotions of boric acid and sulphate of zinc collyrium. Some six months after the filly was again brought to him with evidences of chronic conjunctivitis, inflammation of the lacrymal sac with obstruction of its upper portion of the canal as exhibited by the flow of mucopurulent discharge, on pressure upon the lacrymalis puncta. Examination of the lacrymal outlet on the left side failed to expose the opening of the nasal papilla or foramen or the fluctuating enlargement spoken of by all writers in cases of obstruction of the lacrymal canal. The case was then evidently one of chronic dacriocistitis with stenosis of the lacrymo-nasal canal by congenital occlusion of the nasal papilla. An operation was proposed and accepted as urgent to avoid the possibility of fistula forming. After some little difficulty in obtaining the instruments necessary for the operation the writer succeeded with a whalebone probe to push through the closed papilla which he enlarged with a small incision, pushing it carefully in the canal until it reached the puncta lacrymalis; then a silk seton thread was introduced. The apparition of the muco-pus through the papilla showed the success of the operation. Injections of boric acid solution were made for a short time and after fifteen days the seton was removed and the filly radically cured in twenty. She had no further trouble after.—(*La Clinica, Veterin.*)

SEVERE GUNSHOT WOUND THROUGH THE THORAX [*Doct. Niccolo Carossino*].—Four steers and a mare had been shot at and the doctor was called. One steer was dead, the mare laid down with pulmonary hemorrhage, one steer had a deep cut on the neck over the occipito-atloid ligament, another had received bullets that run through the thighs but made no serious injury, and the fifth animal is the subject of this publication.

It is a fine steer, 5 years old, in prime condition. He stood with his legs apart, moves with difficulty and moans loudly. On the left arm, in its upper part, there is a circular hole characteristic of one made by firearms. Between the 6th and 7th ribs of that side, in the upper portion, there is a small lump, slightly movable. Auscultation and percussion shows that the contents



of the thoracic cavity are free from injury. The animal was thrown and probing of the hole on the arm reveals its tract, and a bullet is extracted from between two intercostal muscles. No other lesion being detected the wound was dressed and the animal allowed to rise. Simple treatment of the wound was applied and the steer seemed to do well and recover, when after a week a swelling appeared toward the superior third of the 8th rib. The temperature ran up. Fluctuation became manifest. The abscess was opened. Quite an abundant flow of pus escaped and on exploring the cavity two large splinters of bones were taken out. They were more or less loose and one of them had another bullet imbedded in its substance. Dressing with tincture of iodine was first resorted to but left aside after a while as too irritating. Granulations soon formed and cicatrization was complete after a month of treatment. It was a lucky thing for the animal that the bullet did not enter the chest, as it was just opposite the heart.—(*Il Nuovo Ercol.*)

LUXATION OF THE SMALL THYROID BRANCHES OF THE HYOID BONE IN A HORSE [*Doct. Riccardo Pili*].—Exceptional accident that occurred in a bay mare in good condition and apparently healthy. The history was that since the day before she had shown difficulty in prehension and chewing of her food. The mouth was, of course, immediately examined. When the introduction of the speculum took place, the tongue appeared very relaxed and flabby and painful when pushed aside by an assistant. No wound was observed but at the base of the tongue, on each side there were two prominences or elevations. Careful manipulation showed them to be the articular lower extremity of the small branches of the hyoid bone, which articulate with the body of that bone. They had been pulled off and the tongue was allowed to drop forward somewhat loose. Carefully this was pushed back in the mouth and attempts made to replace the bones in their place. These having failed, directions were given to leave the mare alone and the writer promised to call again the next day. At the second visit he found that the elevations seen the day before had disappeared, the tongue was normal and processes of feeding perfect. The luxation was consolidated.

On further inquiry it was ascertained that the accident followed the administration of a drench given by an empiric who had applied too exaggerated pulling on the tongue when he drenched the animal.—(*Il Nuovo Ercol.*)



FOREIGN BODIES IN THE GASTRIC VENTRICULUM IN ALL THE BIRDS OF A POULTRY YARD [*Doct. Raffaele Pietro Rossi*].—A dead hen was brought to the author for post mortem so as to find the cause of death. Nothing abnormal was found except some peach stones in the stomach. Gathered together these formed a solid mass, with their faces smooth and filling the stomach, which was much dilated. This was considered the cause of death. On making inquiry it was found that two other hens had died before in which no cause of death had been found. After a week another bird died and at autopsy five peach stones were also found, similar in aspect to those of the first hen. A change of diet and watching to prevent any more stones being picked up by the birds did not seem to reduce the mortality, and finally as time went by all the birds, twelve in number, succumbed to the same trouble. The post mortem revealed in the various stomachs one, two, three and even four peach stones. As the birds had not had water for some time this was considered as the cause of the stones remaining undigested.—(*Il Nuovo Ercol.*)

RELATION BETWEEN DRUGGIST AND VETERINARIAN is the title of an article from the pen of that excellent writer, our esteemed friend, Dr. Thomas B. Rogers, in the *American Journal of Pharmacy* for June, 1915; being in fact a paper (written in the doctor's inimitable, fascinating style, and dealing fearlessly with facts) that he presented at the graduation exercises of the Philadelphia College of Pharmacy. The address is so pregnant with facts and good common-sense advice that will not only prove beneficial to the class of young graduating pharmacists to whom it was addressed, but will also quicken the senses of veterinary practitioners on the relations referred to, that we shall hope to publish the article in a future issue of the REVIEW.

THE NORTHWESTERN OHIO VETERINARY MEDICAL ASSOCIATION.—We received an announcement from Secretary Paul E. Woods of the above association of a joint meeting with the MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION, at Toledo, Ohio, June 29th to July 1st. The program was most attractive, and the personnel of those that were to participate in it, foretold the success of this first joint meeting of these two most excellent state organizations in the Buckeye State.

## CORRESPONDENCE.

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### AN IMPOSTOR WORKING AMONG THE VETERINARY PROFESSION.

South St. Paul, Minn., June 22, 1915.

AMERICAN VETERINARY REVIEW, 509 West 152d St., New York City, N. Y.

GENTLEMEN—Will you kindly insert a notice in your next publication warning the subscribers of your valuable paper of an impostor working among the veterinary profession, especially in Iowa and Illinois, who claims to represent our company. He has been using the names Ed. Hatzenbuhler, Dr. Hardy, H. H. Harding, etc.

He has issued several worthless checks to our knowledge.

This party called on us a few weeks ago and wanted us to employ him, which we absolutely refused to do. He has been posing as our representative ever since. He is about 5 ft. 10 inches tall, weight about 175 lbs., about forty years of age, smooth face, wears chain glasses and has a noticeable limp while walking.

Trusting that this may prevent further imposition upon unsuspecting persons.

We thank you most heartily.

Very truly yours,

NATIONAL SERUM CO.,

By R. E. WATKINS.

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### INFORMATION ON PLANS FOR HOSPITAL WANTED

GRANVILLE, N. Y., June 14, 1915.

AMERICAN VETERINARY REVIEW, New York City:

Gentlemen—I am contemplating the building of a small hospital, and would appreciate it if you could inform me where I might obtain desirable plans, or have same drafted from my notes.

Thanking you for any information or suggestions you may offer, I am,

Sincerely yours,

CHAS. THOMPSON FAKE.

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NOTE.—If some Brother who has had experience in the erection and equipment of a hospital will kindly answer the above query and also the one on page 367 of the June issue, the two gentlemen making them will appreciate it very much, and many other readers will benefit by the information.—[Editor.]

## BIBLIOGRAPHY.

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### CANINE MEDICINE AND SURGERY.

CANINE MEDICINE AND SURGERY. By Charles G. Saunders, V.S., B.V.Sc., Senior Professor, Ontario Veterinary College; Professor of Canine and Feline Medicine, Ontario Veterinary College; Editor Canine Department, American Journal of Veterinary Medicine; O. C., No. 2 Sect., Canadian Army Veterinary Corps, etc., etc. Chicago: American Journal of Veterinary Medicine, 1915.

This little work, devoted to the exclusive consideration of a special branch of veterinary medicine (and a very important branch to the city practitioner), reflects the practical knowledge of its author, and should be a great assistance to the student in acquiring knowledge in canine medicine, and serve as a handy reference book for the practitioner. Having given especial attention to this branch of veterinary medicine for more than twenty-six years, the reviewer fully appreciates the master hand in the author of this book. And though nearly 250 pages have been devoted exclusively to the diseases and treatment of dogs—medicinally and surgically—the author has been as brief as was consistent with completeness in his descriptions, and nothing has been said that could have been left out without detracting from its usefulness.

The differences in the list of ailments in the smaller patients, from those of the larger domestic animals, is not sufficient to merit our giving space to an enumeration of all the subjects treated in *Canine Medicine and Surgery*. Suffice it to say that Professor Saunders has been very thorough and painstaking in the preparation of the work; which fact, added to his great knowledge of the subject, makes its value as a text book and reference work obvious.

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STATE VETERINARIAN RESIGNS OFFICE TO ENTER HORSE PURCHASING BUSINESS: The Cheyenne, Wyoming, *Tribune* of June 5, 1915, publishes a statement from Dr. B. F. Davis, State Veterinarian of Wyoming, to the effect that he intended to tender his resignation, with the intention of associating himself with two other gentlemen, in the purchase of horses for the English government.

## SOCIETY MEETINGS.

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### AMERICAN VETERINARY MEDICAL ASSOCIATION.

The American Veterinary Medical Association will be one of more than eight hundred associations that will hold their annual meeting in or near San Francisco, in connection with the Great Panama-Pacific Exposition. This will afford their members an opportunity of visiting the exposition and attending the association meeting also.

With the rapid development of veterinary science and the importance of the profession to the welfare of the community as demonstrated by the recent outbreak of foot-and-mouth disease, there has come an increased responsibility to the profession, not only to the practitioner, but in a larger national field.

Every qualified veterinarian should join the A. V. M. A., and do his share in assisting this national association in its work of elevating the standards and protecting the interests of the profession.

Recently the state of West Virginia has provided by law that the state and assistant state veterinarians shall be graduates of veterinary colleges recognized by the American Veterinary Medical Association.

The fact that a veterinarian is a member of the A. V. M. A. indicates that he is a graduate of a college recognized by the highest veterinary authority.

There are many important problems to be considered at the next meeting of the A. V. M. A. in Oakland, California, on August 30th, that will be of interest to every veterinarian. Among these may be mentioned the following:

The adoption of a national veterinary emblem for distinguishing veterinarians similar to the red cross in human medicine. The question of establishing an official veterinary journal for the association will also be considered. Active measures will also be taken to secure from colleges, provision for a suitable army veterinary service.

The A. V. M. A. has worked for this for many years and our efforts were *almost* crowned with success by the last congress. We *will* get this just measure through the next congress.

A fine program is nearly ready. If any member has anything to present to the association, if he will let me know at once, I shall be glad to take the matter up with the chairman of the sections.

The meeting will be held at Hotel Oakland, Oakland, Cal. All of the veterinarians of California are working hard to make the meeting a success and they will do it. Every veterinarian should plan to attend the meeting. A special train will leave Chicago, August 24, at 11 p. m., and anyone wanting to go on this train should notify the passenger agent of the Burlington Railroad, Chicago. The fare is \$62.50 round trip from Chicago and proportionate rates from other places. Dr. Haring, chairman of the California committee, says: "The route selected passes through the finest scenery of any route entering California."

Let every veterinarian make a strong effort to attend this meeting and do his duty to himself and his profession.

N. S. MAYO.

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#### MASSACHUSETTS VETERINARY MEDICAL ASSOCIATION.

The Massachusetts Veterinary Association held its 31st annual meeting and banquet at the Boston City Club, Boston, on the evening of April 28th. The following officers were elected for the coming year: President, Dr. W. S. Plaskett; First Vice-President, Dr. Harrie W. Pierce; Second Vice-President, Dr. J. M. Armstrong; Secretary-Treasurer, Dr. Edw. A. Cahill.

After the meeting seventy-one members and guests sat down to an excellent seven-course banquet, following which the newly elected president in a few well-chosen words introduced the toastmaster for the evening, Dr. Thomas Maloney, of Fall River. His wit and fluent English were never more in evidence than on this occasion, while he presided and introduced the speakers. The first speaker was Dr. Louis A. Klein, Dean of the Department of Veterinary Medicine at the University of Pennsylvania. His talk which was "*Therapeutics of Fevers*" was delivered to a very appreciative audience and was followed very closely by all present. It was handled as are all of Dr. Klein's talks, in a most masterly manner. The next speaker was Dr. James Kiernan, of the United States Bureau of Animal Industry, who has represented the Bureau in Massachusetts in eradicating foot-and-mouth disease. He proved a most interesting speaker and talked on both foot-and-mouth disease and tick eradication in the south. Dr. Kiernan was interrupted by the entrance of Governor David I. Walsh and his Secretary, who were given a rousing welcome. The toastmaster next introduced his Excellency,

who spoke at considerable length on the value of the veterinarian, of the value of conserving the health of the animals and consequent health and finances of the citizens. He emphasized the point that the state's responsibility through its veterinarians was to find the cause of disease and methods of control. He paid a glowing tribute to the Commissioner of Animal Industry, Dr. Lester H. Howard. As the Governor spoke he was frequently interrupted by applause, and as he left the hall later, he was given an ovation which will never be forgotten. A brief interruption ensued in which the orchestra which has been with us for many years and which played during the banquet rendered several selections. Colonel Kinkaid, of Boston, next gave us a most interesting talk on South America and described the possibilities of the American business man in that country. The next speaker was Dr. James Ryder, of the United States Bureau of Animal Industry, who because of his excellent talk and wide acquaintance with the members was well received. The program concluded with our esteemed member, Dr. Lester H. Howard, Commissioner of Animal Industry. It is needless to say that his remarks were closely followed and enjoyed by all present. As the gathering adjourned it was voted the "best meeting ever held."

EDW. A. CAHILL, Secretary.

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#### MISSISSIPPI STATE VETERINARY MEDICAL ASSOCIATION.

The 9th annual meeting of the Mississippi State Veterinary Medical Association was held at the City Hall, Vicksburg, June 14, 1915.

Meeting was called to order by the president, Dr. J. A. Beavers, of Canton; Dr. W. L. Gates, of Clarksdale, acting Secretary in the absence of Dr. J. D. Townsend.

Mayor Hays extended the address of welcome to the association, which was responded to by Dr. E. M. Ranck, State Veterinarian.

The following members were present: Drs. Beavers, Ranck, Oliver, Edwards, O. M. Norton, Lewis, Swim, Knutzen, Chadwick, Barnette, Mills, Ferguson, Brock, Nye, McMillian, Luster, Johnson, Phillips, Taylor, Gates and E. S. Norton.

It was suggested by Dr. Beavers and approved by the members that we extend to the members of the B. A. I. working in



the state an invitation to attend our meetings. Upon motion of Dr. Ranck it was decided that the association extend to the Federal authorities a note of appreciation of their work in connection with the recent outbreak of Foot and Mouth Disease and other contagious diseases. A committee composed of Drs. Ranck, Oliver and Lewis was appointed and the following resolutions were adopted:

*Whereas:* The attention of the members of the Mississippi State Veterinary Medical Association has been called to the fact that certain interests have proposed a change in the executive arrangement of the affairs of the bureau of Animal Industry of the Department of Agriculture, and

*Whereas:* It has been suggested that a head of that Bureau should be a layman, and not a veterinarian, and

*Whereas:* We believe that the present method of conducting the affairs of the B. A. I. has proven effective and been demonstrated to be practical in the control of contagious and infectious diseases in Mississippi among live stock, therefore

*Be It Resolved:* That we endorse the present arrangement of the Federal control of animal diseases, and believe the executive head should be a qualified veterinarian, and that we furthermore

*Resolve:* That we heartily commend the present force of capable men who have so ably assisted the livestock interests of this state through their co-operation with the Mississippi State Live Stock Sanitary Board and our state veterinarian in preventing up to this time the introduction of Foot and Mouth Disease, as well as assisting in the eradication of tuberculosis in cattle, cattle ticks and glanders in horses.

*Be It Further Resolved:* That a copy of these resolutions be placed upon the minutes of our present meeting and be published in veterinary journals.

The officers elected for the following year were Dr. W. L. Gates, of Clarksdale, President; Dr. W. R. Edwards, of Vicksburg, Vice-President; and Dr. E. S. Norton, of Greenville, Secretary and Treasurer.

Motion was made by Dr. Ranck that the incoming president shall appoint a committee of three, to be known as the legislative committee, whose duty it shall be to receive suggestions from members of the association for proposed legislative measures, to promulgate and outline such measures as we may wish to present to the incoming legislature relating to veterinary medicine and to further livestock interests of Mississippi. Drs. Ranck, Lewis and O. M. Norton were appointed by Dr. Gates.

The following papers were read and discussed: *Report on Ophthalmic Mallein Test for Glanders*, by O. M. Norton; *Forage Poisoning*, by E. S. Norton; *Anthrax and Anthrax Vaccine*, by James Lewis; *Surgical Diseases and their Treatment*, by John Oliver; *Tetanus and Its Treatment*, by W. L. Gates, and *Foot and Mouth Disease*, by E. M. Ranck.

Upon invitation of Dr. Oliver, the association voted to hold their next meeting at Columbus, on the second Tuesday and Wednesday of January, 1916. On motion, meeting adjourned to attend clinics at Dr. Edwards' hospital.

E. S. NORTON,  
Secretary-Treasurer Elect.

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## OBITUARY.

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PAUL O. KOTO, M.D.C.\*

Dr. Paul O. Koto, former State Veterinarian of Iowa, died at his home in Forest City, Iowa, at 3:00 P. M., Saturday, June 19th. Dr. Koto had been suffering from arterial sclerosis for the past three years and was confined to his bed for three months prior to his death. Funeral services were held at the home June 22d, where a large number of friends gathered to pay their respects.

Dr. Koto was born on a farm near Orfordville, Rock County, Wisconsin. He was educated at Commercial College, Jamesville, Wis., from which he graduated in 1877. He studied medicine for one year at Taopi, Minn., and moved to Forest City in 1881, where he engaged in the drug business.

He began the study of veterinary medicine in 1893 and was graduated from the Chicago Veterinary College, March, 1895. He was an active and influential member of the Twenty-eighth General Assembly of Iowa, and aided in the improvement of the veterinary laws of the state. He was appointed assistant state veterinarian and held that office until 1902, when he was made State Veterinarian, which office he held until April, 1911, when he retired from public life. He was a REVIEW reader for many years.

Dr. Koto will be remembered as an enthusiastic worker in his profession, and was well liked by all who knew him.

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\* Data furnished by Dr. Robt. D. Wall, Des Moines.

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## NEWS AND ITEMS.

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DR. CHAS. G. LAMB APPOINTED STATE VETERINARIAN OF COLORADO: The Fort Collins, Colorado, *Courier* of June 2, 1915, announces the appointment, by Governor Carlson, of Dr. Chas. G. Lamb as State Veterinarian of Colorado, to succeed Dr. W. W. Yard.

PRACTITIONERS' COURSE TO GRADUATE VETERINARIANS—SUMMER SCHOOL SESSION.—The Michigan Agricultural College, at East Lansing, announces the above course, between the dates of June 28 and July 16, inclusive. We regret that we did not receive it in time to announce this course in our June issue.

DR. LOEFFLER: The death of Dr. Loeffler is announced, *via* Amsterdam, in the Berlin *Mittags Zeitung*.

There are few greater names in the annals of bacteriological medicine than that of Friedrich Loeffler. Born in Frankfurt-on-the-Oder in 1852, Loeffler was educated in the universities of Würzburg and Berlin. He devoted himself early to investigations bearing on the causation of the so-called parasitic diseases, and in 1884 published a systematic description of what is now known as the Klebs-Loeffler bacillus—the bacillus of diphtheria. On Loeffler's work has been built up the diphtheria antitoxin treatment by which countless lives have been saved and the mortality of this terrible disease greatly reduced.

In 1888 Loeffler was appointed Professor of Hygiene and Director of the Hygienic Institute, University of Greifswald, and in 1895 he was elected a member of the Imperial Institute of Health, where with Koch and Gaffky he carried out investigations on disinfection with steam. He was, with Schütz, the discoverer of the causative organisms of several animal diseases, notably of the "red murrain" of pigs, which, until he worked upon it, had been classed with swine fever. He also conducted investigations into the diphtheria of calves and pigeons, and indeed throughout showed the keenest interest in the comparative study of infectious ailments.

To Loeffler also belongs the credit of achieving some of the early work associated with the application of the aniline dyes to bacteriological processes. Loeffler's "methylene-blue method" is famous.—(From *Veter. Record*.)

A SEQUEL OF TROUBLE.—One sequel to the campaign against foot-and-mouth disease is a lot of wild talk about veterinarians and the veterinary medical profession. No doubt in the excite-

ment of the campaign veterinarians made many mistakes in addition to the one supreme error to be charged against those who dealt with the first outbreak in Michigan. Beyond question among veterinarians, as among other men, there are some incompetents, some peewees, some who cannot exercise even a little brief authority without arrogance and even injustice toward those with whom they have to deal. Mistakes are a part of the daily history of mankind and may be excusable or otherwise. Arrogance and injustice are not excusable, but they are not a characteristic of the veterinary medical profession, nor of those who led the work of suppressing this latest menace to our vast livestock industry. And it is unjust even to reflect on a profession which has done so much for that industry or on the men who have led this apparently successful campaign because of the mistakes, the arrogances or the other offenses of a few who are not a credit to their profession. It would be well, before passing judgment on these officials, to try to understand some of the difficulties under which they labored and to realize the burden of responsibility which they bore. And further, it would be well to consider the results that have been achieved. Although the sacrifice was great and the cost enormous they were as a molehill to a mountain in comparison with the sacrifices and cost of policies or methods which would have allowed this disease to escape into prevalence among our flocks and herds, imposing endless quarantines, condemnations and losses on stockmen, slaughterers and all concerned in the industry.

It is not for the ultimate good of the public or the livestock sanitary service that this work be put under the sole direction of men who may, even unconsciously, swerve from the path of safety by reason of financial interest or public clamor. Talk of putting so-called "practical" men, not scientists, in charge of livestock sanitary work is illogical. The "practical" men in any case are those who know most about the subject, and in this case the best "practical" men are veterinarians who have a large fund of common sense to supplement their technical knowledge. Let us not be misled by the sound of words. As to the achievements of the veterinary medical profession for animal industry history records a long list of them—rinderpest, pleuro-pneumonia, tick fever, scab, hog cholera, glanders, foot-and-mouth and other diseases which have been eradicated, controlled or reduced in destructive power. As this country gets older and livestock is kept on its soil for increasing years the need of veterinary science will constantly grow and likewise its benefits. Let us be thankful that we have had and still have it for the protection and

development of the livestock industry. And let us not permit the mistakes of a few men, or the drawbacks of one outbreak of disease, to blind us to its great value.—Editorial, *National Stockman and Farmer*, Pittsburg, Pa., June 26.

**MORE LIVE STOCK NOW THAN A YEAR AGO.\***

*Government Statistics Contradict Reports That Prices Will Reach Unprecedented Figures.*

WASHINGTON, D. C.—For the first time in many years, information collected by the United States Department of Agriculture shows that all classes of live stock in the United States are increasing in numbers. Thus the real facts contradict absolutely sensational reports that prices for meat and shoes would rise to unprecedented figures in the immediate future. It has even been said that a Government statistician predicted meat at 50 cents a pound, and shoes at \$10.00 a pair within the next two years. Such a prediction, the real Government statisticians say, is quite unwarranted.

On January 1, for example, the number of beef cattle showed an increase of 3.4 per cent. over the number a year ago, and an actual increase of 1,212,000 head. Hitherto the number of beef cattle in the United States has declined steadily since 1910. There are also more milch cows in the country than last year, the increase being 2.5 per cent. or in numbers, 525,000. Swine, however, showed the greatest increase of all classes—9.6 per cent. On January 1, 1914, there were only 58,933,000 swine in the country, on January 1, 1915, 64,618,000. This is accounted for by the fact that the production of swine can be increased more rapidly than that of other classes of livestock and consequently an enlarged demand can be met more readily.

The prediction of 50-cent meat and \$10 shoes was accompanied by the declaration that France alone has taken from America nearly 300,000 horses within the last 5 months, and that the other countries at war have drawn upon our resources in the same proportion. The facts are that more horses were on the farms of the United States on January 1, 1915, than there were a year before, the increase being 233,000 head or 1.1 per cent. So far from France alone having taken 300,000 horses from us, the total exports since the war began have certainly been much less than 100,000, and very likely not over 75,000. Since there are approximately 25,000,000 horses altogether in the United States, the drain on account of the war is scarcely alarming.

\* Office of Information, U. S. Department of Agriculture.



It is in fact pointed out by Government statisticians that the market value of farm horses has actually declined to such an extent that the average is now about \$6 a head less than a year ago. This decline is most noticeable in the cotton states and in those states which make a business of breeding horses for sale in other sections. Mules have declined even more than horses, their value being now \$11.50 per head less than a year ago. The explanation is to be found in the depression on account of the cotton situation in the South, which is the great market for mules. An improvement in this respect will do much to restore the demand for horses, so that Government specialists while ridiculing the notion of a horse famine are convinced that farmers will find it profitable to use good work mares for breeding more stock.

As for hides, the situation is not quite so clear, but even here there has been much gross exaggeration. From two-fifths to less than one-half of the leather used in this country is imported, about 25 per cent. of the foreign hides coming from Argentina, 15 per cent. from Canada, 11 per cent. from Mexico,  $8\frac{1}{2}$  per cent. from European Russia, and  $7\frac{1}{2}$  per cent. from France. Since the outbreak of the war, importations have shown a certain falling off, those for September, 1914, for example, being only 34,000,000 pounds, instead of 45,000,000 pounds the year previous. There is, however, little reason to suppose that this decrease will be permanent or of sufficient importance to create any real scarcity. Since the great bulk of the imported hides come from countries that are not at war, shipments are not interfered with in any way, and the only new factor to be considered is the possibility of an increased demand by the warring countries.

It is believed, however, that the United States is now in a better condition to face such a situation than for years past. The tide, it seems, has turned. Instead of live stock steadily decreasing year after year, this year for the first time, as has been said, all classes show an appreciable increase. Including horses, mules, milch cows, beef cattle, sheep and swine, there were on January 1, 1915, 7,712,000 more farm animals in the United States than on January 1, 1914. The increase in the total value was \$78,024,000, or 1.3 per cent. It is quite true that this increase is not yet proportional to the increase in population, which is approximately 2 per cent.; but the fact that there is an increase, that the tide seems definitely to have turned, is regarded as a sufficient answer to alarming exaggerations and misleading figures.

COMPENSATION FOR SLAUGHTER OF ANIMALS ON ACCOUNT OF FOOT-AND-MOUTH DISEASE OR ANTHRAX.—The following



became a law in New York State on May 11, 1915: In the event of the breaking out within the state of foot-and-mouth disease or anthrax, the control, suppression or eradication of which involves the general condemnation and slaughter of cattle, sheep or swine and the disposal of the carcasses thereof by state authorities in the interest of public health and welfare, the owner of each such animal slaughtered shall receive compensation for each animal slaughtered. The amount to be paid for each animal, pursuant to the provisions of this section, shall be fixed by a board of appraisal, to consist of the commissioner of agriculture, or his duly accredited representative, and a representative of the owner, appointed by the owner. If in any case the members of such board fail to agree, they shall choose a third member of such board, and the findings of a majority shall be final. Valuations in all cases shall be made on the basis of the utility value of the slaughtered animals as producing and breeding animals. The determination of such board as to the amount to be paid by the state to any owner for any such animal shall be final, and a certificate of appraisal shall be issued under the hands of a majority of such board to the owner. Such certificate shall be verified by the members of the board of appraisal signing the same. The amounts found to be due by an appraisal under this section shall be paid, upon the audit and warrant of the comptroller, to the owners entitled thereto, upon presentation of proper certificates of appraisal. Awards not paid within thirty days from the making thereof shall bear interest at the rate of six per centum per annum, unless moneys appropriated therefor were available within said thirty days. The other provisions of this article relating to appraisal and amount of compensation shall not apply to the destruction of animals under this section where the conditions exist as herein provided.

**RAW SKIMMED MILK A FOOT-AND-MOUTH MENACE—LARGE NUMBER OF HOGS STRICKEN IN PRESENT OUTBREAK ATTRIBUTED TO THIS CAUSE. GARBAGE ALSO MAY BE A CARRIER TO HOGS.**—Washington, D. C. A feature of the present outbreak of foot-and-mouth disease to which the Federal authorities attach much importance is the unprecedentedly large number of hogs which have been affected. Both actually and in proportion to the total number of animals stricken, this has been much larger than in any of the previous outbreaks in this country. The chief reason, the authorities say, is the spread of the infection through uncooked skimmed milk and other creamery by-products returned to the farms to be fed hogs. Infected garbage, it is thought, is also to be held responsible for a portion of the loss.

In the epidemic of 1902 in which 4,461 animals were lost, only 360 of the total were hogs. The loss in cattle amounted to nearly 87 per cent. of the total, that in hogs to only 8 per cent., and in other animals to only 5 per cent. In the present epidemic, however, the loss in hogs has been almost equal to that of cattle, each being within a fraction of 47 per cent. Of 146,138 animals lost since the outbreak of the disease in Michigan last fall, 68,776 were cattle; 68,275 hogs; and the remainder, 9,087 sheep and goats. The epidemic of 1908 stands in this respect, as well as in time, midway between those of 1902 and 1914. In 1908, 56 per cent. of the loss was in cattle, 37 per cent. in hogs, and approximately 7 per cent. in other animals.

In the opinion of specialists these figures demonstrate the necessity for more rigid regulations in regard to the feeding of skimmed milk, similar dairy products and garbage. Since 1902 creameries have become much more common and the danger to the country of their returning unpasteurized milk to the farms has become correspondingly greater. In Michigan, it has been definitely established that in the early days of the outbreak the infection was spread through skimmed milk fed to hogs, and there is every reason to believe that the same thing occurred in a number of other localities. It is easy to pasteurize the skimmed milk and the extra expense is not sufficient to warrant the neglect of this precaution. Pasteurization has been shown to be a complete safeguard against the spread of foot-and-mouth disease through milk, either to human beings or to animals.

The question of infected garbage is more difficult to handle, for by no means all of the meat in this country is subject to Federal inspection. In many sections meat animals are slaughtered locally. Cooking will destroy the foot-and-mouth germ so that this meat can be eaten without bad results, but the trimmings—the skin, the fat, and particularly the marrow—which are thrown away or fed to hogs, may be at the same time highly infectious.

In Philadelphia the disease has recently appeared in several herds of garbage-fed hogs, and although it is not absolutely certain that the contagion was conveyed through this means, it seems quite possible that it was. The sterilization of garbage intended for hogs is, therefore, like the pasteurization of skimmed milk and similar products, a very desirable precaution. In fact, the Federal authorities do not hesitate to say that experience in this outbreak demonstrates the need of State legislation on this subject. In the absence of legislation the farmer who wishes to be sure of his skimmed milk should boil it after its return from the creamery. Office of Information, U. S. Dept. of Agriculture. Released when received.

# VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the date given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings. Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organisation.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alabama Veterinary Med. Ass'n.....	Mar. 5-6-7, 1914 .....	Auburn.....	C. A. Cary, Auburn.
Alumni Ass'n, N. Y.-A. V. C.....	June 10, 1915.....	141 W. 54th St.	P. K. Nichols, Port Richmond, N.Y.
Alumni Ass'n U. S. Coll. Vet. Surg.....	April 15, 1915.....	Washington, D. C.	C. R. Smith, Washington, D. C.
American V. M. Ass'n.....	Week beginning Aug. 30, 1915.....	Oakland, Cal.....	Nelson S. Mayo, 4753 Ravenswood Ave., Chicago, Ill.
Arkansas Veterinary Ass'n.....	1st Week Feb., 1916.....	Little Rock.....	R. M. Gow, Fayetteville.
Ashabula, Lake & Genuga Vet. M. A. Ass'n Médécalle Veterinaire Francaise. "Laval".....	1st and 3d Thur. of each month.....	Painesville, O., Loc. Room, Laval Un'y, Mon.	R. A. Greenwood, Sec.-Treas.
B. A. I. Vet. In. A., Chicago.....	2d Fri. each month.....	Chicago.....	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., So. Omaha.....	3d Mon. each month.....	S. Omaha, Neb.....	H. A. Smith, Chicago, Ill.
Buchanan Co. Vet. Ass'n.....	Monthly.....	St. Joseph.....	E. J. Jackson, So. Omaha.
California State V. M. Ass'n.....	December 10, 1913.....	San Francisco.....	F. W. Caldwell, St. Joseph, Mo.
Central Canada V. Ass'n.....	Feb. and July.....	Ottawa.....	John F. McKenna, Fresno.
Central N. Y. Vet. Med. Ass'n.....	June and Nov.....	Syracuse.....	A. E. James, Ottawa.
Chicago Veterinary Society.....	2d Tues. each month.....	Chicago.....	W. B. Switzer, Oswego.
Colorado State V. M. Ass'n.....	May 28-29, 1915.....	Fort Collins.....	D. M. Campbell, Chicago
Connecticut V. M. Ass'n.....	Pending.....	New Haven.....	I. E. Newsom, Ft. Collins.
Delaware State Vet. Society.....	Jan., Apl., July, Oct.....	Wilmington.....	A. T. Gilyard, Waterbury.
Genesee Valley V. M. Ass'n.....	2d week, July, 1913.....	Rochester.....	A. S. Houchin, Newark, Del.
Georgia State V. M. A.....	Dec. 22-23, 1913.....	Atlanta.....	J. H. Taylor, Henrietta.
Hamilton Co. (Ohio) V. A.....	.....	.....	P. F. Bahnen, Americus.
Idaho Ass'n of Vet'y Graduates.....	.....	Idaho Falls.....	Louis P. Cook Cincinnati.
Illmo Vet. Med. Ass'n.....	Nov. 20, 1914.....	E. St. Louis.....	J. R. Fuller, Weiser.
Illinois State V. M. Ass'n.....	Dec. 3-4-5, 1914.....	Chicago.....	L. B. Michael, Collinsville, Ill.
Indiana Veterinary Association.....	Jan. 14, 1914.....	Indianapolis.....	L. A. Merrill, Chicago.
Iowa Veterinary Ass'n.....	.....	.....	A. F. Nelson, Indianapolis.
Kansas State V. M. Ass'n.....	Jan. 5-6, 1915.....	Topeka.....	H. B. Treman, Rockwell City.
Kentucky V. M. Ass'n.....	Oct. & Feb. each year.....	Lexington.....	J. H. Burt, Manhattan.
Keystone V. M. Ass'n.....	2d Tues. each month.....	Philadelphia.....	Robert Graham, Lexington.
Lake Erie V. M. Association.....	Pending.....	.....	Cheston M. Hoskins.
Louisiana State V. M. Ass'n.....	Sept., 1914.....	Lake Charles.....	Phil. H. Fulstow, Norwalk, Ohio.
Maine Vet. Med. Ass'n.....	April 14, 1915.....	Waterville.....	Hamlet Moore, New Orleans, La.
Maryland State Vet. Society.....	Pending.....	Baltimore.....	H. B. Wescott, Portland.
Massachusetts Vet. Ass'n.....	4th Wed. each month.....	Young's, Boston.....	John H. Engel, Baltimore.
Michigan State V. M. Ass'n.....	Feb. 2, 3, 1915.....	Lansing.....	W. T. Pugh, Southbridge.
Minnesota State V. M. Ass'n.....	Jan. 13-14-15, 1915.....	St. Paul.....	W. A. Ewalt, Mt. Clemens.
Mississippi State V. M. Ass'n.....	Jan. 4-5, 1916.....	Vicksburg.....	G. Ed. Leech, Winona.
Missouri Valley V. Ass'n.....	July 12-13-14, 1915.....	Omaha, Neb.....	E. S. Norton, Greenville.
Mississippi Valley V. M. Ass'n.....	Semi-Annually.....	Galesburg, Ill.....	Hal. C. Simpson, Denison. Ia.
Missouri Vet. Med. Ass'n.....	July 28-29, 1915.....	St. Louis.....	G. E. McIntyre, Alexis, Ill.
Montana State V. M. A.....	Sept. 22-23, 1915.....	Helena.....	Chas. D. Folse, Kansas City.
Natl Ass'n B. A. I. Employees.....	2d Mon., Aug., 1915.....	New York, N. Y.....	A. D. Knowles, Missoula.
Nebraska V. M. Ass'n.....	1st Mo. & Tu., Dec. '13.....	Lincoln, Neb.....	S. J. Walkley, 185 N. W. Ave., Milwaukee, Wis.
New York S. V. M. Soc'y.....	August 3-4-5, 1915.....	Ithaca, N. Y.....	Carl J. Norden, Nebraska City.
North Carolina V. M. Ass'n.....	June 23, 1914.....	Wilson.....	H. J. Milks, Ithaca, N. Y.
North Dakota V. M. Ass'n.....	Week of July 20, 1914.....	Fargo.....	J. P. Spoon, Burlington.
North-Western Ohio V. M. A.....	Nov. 1913.....	Delphos.....	A. F. Schalk, Agricultural College.
Ohio State V. M. Ass'n.....	Jan. 13-14, 1916.....	Columbus.....	E. V. Hover, Delphos.
Ohio Soc. of Comparative Med.....	Annually.....	Upper Sandusky.....	F. A. Lambert, Columbus.
Ohio Valley Vet. Med. Ass'n.....	.....	.....	F. F. Sheets, Van Wert, Ohio.
Oklahoma V. M. Ass'n.....	Pending.....	Oklahoma City.....	J. C. Howard, Sullivan.
Ontario Vet. Ass'n.....	1st Week in Feb. 1914.....	Toronto.....	S. H. Gallier, Norman.
Pennsylvania State V. M. A.....	March 2, 3, 1915.....	Philadelphia.....	L. A. Willson, Toronto.
Phillipine V. M. A.....	Call of President.....	Manila.....	John Reichel, Glenoiden.
Portland Vet. Med. Ass'n.....	4th Tues. each month.....	Portland, Ore.....	David C. Kretzer, Manila.
Province of Quebec V. M. A.....	Jan. and June.....	Mon. and Que.....	Sam. B. Foster, Portland, Ore.
Rhode Island V. M. Ass'n.....	Pending.....	Providence.....	Gustave Boyer, Rigaud, P. Q.
South Carolina Ass'n of Veter'ns.....	Aug. 3, 1915.....	.....	J. S. Pollard, Providence.
South Illinois V. M. and Surg. Ass'n.....	1st Wed. fol. the 2d Sun. each month.....	Centralia.....	B. K. McInnes, Charleston.
St. Louis Soc. of Vet. Inspectors.....	Dec. 16, 1914.....	St. Louis.....	F. Hockman, Iowa.
Schuylkill Valley V. M. A.....	.....	Reading.....	Wm. T. Conway, St. Louis, Mo.
Soc. Vet. Alumni Univ. Penn.....	.....	Philadelphia.....	W. G. Huyett, Wernersville.
South Dakota V. M. A.....	July 1, 2, 1915.....	Rapid City.....	B. T. Woodward, Wash'n, D. C.
Southern Aux. of Cal. S. V. M. Ass'n.....	Jan., Apl., July, Oct.....	Los Angeles.....	S. W. Allen, Watertown.
South St. Joseph Ass'n of Vet. Insp.....	4th Tues. each month.....	407 Illinois Ave.....	J. A. Dell, Los Angeles.
Tennessee Vet. Med. Ass'n.....	November, 1914.....	Nashville.....	H. R. Collins, South St. Joseph.
Texas V. M. Ass'n.....	Nov., 1913.....	College Station.....	Jas. McMahon, Columbia.
Twin City V. M. Ass'n.....	2d Thu. each month.....	St. P.-Minneapolis.....	Allen J. Foster, Marshall.
Utah Vet. Med. Ass'n.....	Spring of 1914.....	Salt Lake City.....	M. H. Reynolds, St. Paul, Minn.
Vermont Vet. Med. Ass'n.....	.....	.....	E. J. Coburn, Brigham City.
Veterinary Ass'n of Alberta.....	.....	.....	G. T. Stevenson, Burlington.
Vet. Ass'n Dist. of Columbia.....	3d Wed. each month.....	514 9th St., N.W.....	C. H. H. Sweetapple, For. Saskatchewan, Alta., Can.
Vet. Med. Ass'n, Geo. Wash. Univ.....	1st Sat. each month.....	Wash'ton, D. C.....	H. Stanley Gamble, 1329 Gallatin, Wash., D. C.
Vet. Ass'n of Manitoba.....	Feb. & July each yr.....	Winnipeg.....	J. M. Cashell, 2115 14th Street.
Vet. Med. Ass'n of N. J.....	July, 1915.....	.....	Wm. Hilton, Winnipeg.
V. M. Ass'n, New York City.....	1st Wed. each month.....	141 W. 54th St.....	E. L. Loblen, New Brunswick.
Veterinary Practitioners' Club.....	Monthly.....	Jersey City.....	R. S. MacKellar, N. Y. City.
Virginia State V. M. Ass'n.....	July 9-10, 1914.....	Staunton.....	T. F. O'Dea, Union Hill, N. J.
Washington State Col. V. M. A.....	1st & 3d Fri. Eve.....	Pullman.....	Geo. C. Faville, North Emporia.
Washington State V. M. A.....	June, 1915.....	Yakima.....	R. J. Donohue, Pullman.
Western N. Y. V. M. A.....	June 24, 1914.....	Buffalo.....	Carl Cozier, Bellingham.
Western Penn. V. M. Ass'n.....	3d Thu. each month.....	Pittsburgh.....	W. E. Fritz, 358 Jefferson St., Buffalo.
Wisconsin Soc. Vet. Grad.....	Feb. 10, 11, 1914.....	Milwaukee.....	Benjamin Gunner, Sewickley.
Wisconsin Vet. Med. Ass'n.....	July 14-15, 1915.....	Chippewa Falls.....	W. W. Arabarger, Watertown.
York Co. (Pa.) V. M. A.....	June, Sept., Dec., Mar.....	York.....	W. A. Walcott, Madison.
			E. S. Bausticker, York, Pa.

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